

Voice morphology as the spell-out of parallel chains: Insights from Austronesian and beyond*

Many Austronesian languages exhibit a type of verbal inflection known as ‘voice’ or ‘focus,’ which, in a descriptive sense, tracks the grammatical role of the topic or relativized phrase of a given clause. New comparative data reveals that such affixal alternations are best analyzed as the morphological reflex of separate Agree operations targeting one and the same goal (topic/relativized phrase), demonstrating a feature of discourse configurationality (Li & Thompson 1976; Miyagawa 2010) and a case of parallel chain relations (Chomsky 2005) spelled out as verbal morphology. A similar type of portmanteau verbal inflections is found in western Nilotic and Caucasian, with four loci of variation attested: (a) the type of \bar{A} -operation that triggers the verbal inflection, (b) number of voice distinctions (i.e. how many and which parallel chain relations are realized as verbal morphology), (c) presence or absence of ϕ -feature agreement with the goal, and (d) whether or not the goal undergoes overt \bar{A} -movement. This observation from Austronesian and beyond suggests that ϕ -feature agreement with the goal is not the only available morphological means for indexing abstract Agree relations in narrow syntax, and that what is known as Austronesian-style voice or *wh*-agreement constitutes an understudied type of agreement morphology that serves a similar purpose.

*I would like to thank the participants in the Move & Agree workshop, as well as the audiences at WCCFL 38 and AFLA 28 and the anonymous reviewer for this volume for valuable comments on this paper. Thanks also to Nico Baier, Mitcho Erlewine, Shin Fukuda, Michael Hamilton, Ileana Paul, Lisa Travis, Jozina Vander Kloek, and Susi Wurmbrand for useful comments and suggestions.

Contents

1	Introduction	3
2	Austronesian voice basics: how voice works as topic-indexing morphology	6
2.1	Philippine-type voice affixes as agreement morphology hosted in the C domain	9
2.2	Pivots as topics in non-RC environments	11
2.3	Evidence for a separate subject/nominative position	12
3	Two probes, one goal: Philippine-type voice as the reflex of four parallel chain relations	14
3.1	Mapping between voice and pivot section	14
3.2	‘Actor Voice’ as the spell-out of parallel chains with $[u\bar{A}]$ and $[u\phi]$ on T	16
3.3	‘Patient Voice’ as the spell-out of parallel chains with $[u\bar{A}]$ and $[u\phi]$ on Voice	17
3.4	‘Locative Voice’ as the spell-out of parallel chains with $[u\bar{A}]$ and $[u\phi]$ on P _{LOC}	18
3.5	‘Circumstantial Voice’ as the morphological reflex of Agree with $[u\bar{A}]$	19
4	Voice and wh-agreement in Nilotic and Caucasian	20
5	Four loci of variation within and across Austronesian, western Nilotic, and Abaza	23
5.1	The type of \bar{A} -operation that triggers voice inflections	24
5.2	Presence or absence of overt \bar{A} -movement of the goal	24
5.3	Optionality in overt ϕ -feature agreement with the goal	25
5.4	Implications and remaining questions	29
6	Conclusion	30

1 Introduction

Many natural languages employ ϕ -feature agreement to indicate the Agree relation between the ϕ -probe and its goal (Chomsky 1995 et seq.). In Arabic and English, for example, Agree with the ϕ -probe on T is indicated by the spell-out of the ϕ -features of the goal. This morphology is known as subject agreement (1).¹

- (1) a. Arabic
Al-ʔawlaadu qadim-**uu**/*-**a**.
the-boys-3MP came-**3MP**/***3MS**
'The boys came.' (Bahloul & Harbert 1993:15)
- b. English
John seem-**s**/* \emptyset to have drunk too much coffee.

In some languages, the abstract Agree relation between the ϕ -probe on Voice/ v and its goal is also indexed by ϕ -feature agreement. This is known as object agreement (Chomsky 2000, 2001, Baker 2008, 2012). Nahuatl (Uto-Aztecan), for example, employs overt ϕ -feature agreement with both subject and object (2).

- (2) Nahuatl
ni-k-te:moa šo:čitl.
1s.S-3S.O-seek flower
'I seek a flower.' (Stiebels 1999:790)

But how are other types of Agree relation – such as Agree with an \bar{A} -probe (e.g. [uTOP], [uREL], or [uFOC]) – realized in narrow syntax? Recent work has shown that ϕ -feature agreement may also be employed to index the Agree relation with an \bar{A} -probe. Consider below what is known as 'topic agreement' in Kinande (Bantu), San Martin Peras Mixtec (Mixtec), and Ripano (Romance) (3)–(5). The topic of each sentence is italicized in the free translations.

- (3) San Martin Peras Mixtec
- a. **Rà_i-xá'**antsya **rà Juan_i** chikí.
he-cut.PRES he Juan tuna
'*Juan* is cutting tunas.' (Ostrove 2018:vii) (subject topic)
- b. **Rì_i-xá'**antsya **rà Juan rì** **chikí_i**.
it.AML-cut.PRES he Juan it.AML tuna
'*Juan* is cutting *tunas*.' (Ostrove 2018:viii) (object topic)

¹List of abbreviations: 1: first person; 2: second person; 3: third person; ADV: adverbial; AFF: affirmative; AML: animal gender; AOR: aorist; AV: actor voice; BEN: benefactive; CN: common noun; CONT: contemplated aspect; COP: copula; CSL: cislocative; CV: circumstantial voice; DCL: declarative; DEF: definite; DEFV: default voice; EXPL: expletive; EXT: extended mood marker; F: feminine; FV: final vowel; HAB: habitual; IMP: imperative; IND: indicative; INDEF: indefinite; IO: indirect object; IPF: imperfective; IRR: irrealis; LK: linker; LOC: locative; LV: locative voice; MNR: manner; MP: masculine plural; MS: masculine singular; N: nonhuman; NEG: negative; NFIN: non-finite; NSUBJ: nonsubject; .O: OBLV: oblique voice; OV: object voice; NPST: nonpast; object agreement; P: preposition; PERF: perfective; PL: plural; PN: personal name; POSS: possessive; PRES: present tense; PROG: progressive; PST: past; PV: patient voice; RC: relative clause; RE: reflexive; ; REFL: reflexive; rel: relativizer; .S: subject agreement; SG: singular; SPEC: specific noun marker; SUBJ: subject; T: tense affix; TEMP: temporal; TOP: topic.

- (4) Kinande
- a. **Omakuli** mo-a-seny-ire olukwi.
woman.1 AFF-1.S/T-chop-EXT wood.1.1
 ‘The woman chopped wood.’ (subject topic)
- b. **Olukwi** si-lu-li-seny-a bakali.
wood.11 NEG-11.S-PRES-chop-FV women.2
 ‘Women do not chop wood.’ (Baker 2003:113) (object topic)
- (5) Ripano
- a. **Tu** nghe mme ti pij-u tropp-e cunfidenz-e.
you.M with me REFL take-SG.M too.much-SG.F confidence-SG.F
 ‘You take too much liberty with me.’ (Rossi 2008: 86) (subject topic)
- b. L-u preta cunzacr-e ll’-ostia.
 the-SG.M priest.SG.M consecrate-3SG.F the-host.SG.F
 ‘The priest consecrates *the Host*.’ (Rossi 2008: 87) (object topic)

In all three languages, ϕ -feature agreement on the verb targets the topic and not the grammatical subject (Miyagawa 2010; Ostrove 2018; D’Alessandro 2020), displaying a key feature of *discourse configurationality* (6) (Li & Thompspon 1976; É Kiss 1995; Miyagawa 2010, 2017; a.o.).

(6) Discourse configurational languages

In a topic-prominent language, the topic is, in a way, an alternative to the subject [in a subject-prominent language] (...) (É Kiss 1995:4)

The definition above, as has been extensively discussed in recent work (Miyagawa 2010, 2017; van Urk 2015; D’Alessandro 2020; a.o.), reflects a common assumption in the literature – that languages are either subject-prominent or topic-prominent in agreement morphology. This suggests the two-way typology in (7).

	Subject-prominent language	Topic-prominent language
(7) Agree with [$u\phi$] realized in narrow syntax	YES	NO
Agree with [$uTOP$] realized in narrow syntax	NO	YES

An implicit assumption behind (7) is therefore that ϕ -feature agreement in a given language is either A-oriented or \bar{A} -oriented. This raises the underexplored question (8).

- (8) Are there languages where the Agree relations with [$u\phi$] and [$uTOP$] are both indexed in narrow syntax?

In this paper, I demonstrate that such a design is not only logically possible but also attested in natural languages – although the type of agreement that manifests this design has not been widely recognized or discussed. One group of languages that I argue manifests this pattern is western Austronesian languages of the Philippine-type. Consider below two examples from Seediq (ISO 639-3 trv), a Philippine-type language of central Taiwan:

- (9) Seediq
- Wada-ku-na bbe-un na pawan ka yaku.
 PST-1SG.TOP-3SG.SUBJ hit-PV NOM Pawan PIVOT 1SG
 ‘Pawan hit *me*.’ (object topic construction)

In (9), the presence of the affix (-*un*) on the lexical verb – known in literature as the patient voice – indicates that the topic of the sentence is the direct object (‘me’). Following the convention in the Austronesian literature, the topic marker *ka* (and its equivalent in other languages) is labeled as ‘pivot’ throughout the paper. The form of the verbal affix *-un* alternates depending on the grammatical role of the topic: subject (actor voice), direct object (patient voice), locative phrases (locative voice), or any role that is none of the above, such as instrument, benefactor, or reason (circumstantial voice). The specific mapping between voice morphology and the topic’s grammatical role will be discussed in detail in section 3.

Notice also that both the grammatical subject (‘Pawan’) and the object topic (‘me’) in (9) are cross-referenced by a person/number-indexing morpheme that matches the ϕ -features of the full DP – *ku* for the first-person singular topic/pivot and *na* for the third-person singular subject. Such morphemes are conventionally referred to as pronominal clitics in the Austronesian literature, although their precise syntactic status remains underexplored. In this paper, I put forward the view that these person/number-indexing morphemes are best analyzed as agreement affixes – namely, ϕ -feature agreement with the topic and the grammatical subject. In this view, both the subject and the topic in (9) trigger ϕ -feature agreement, demonstrating a typologically rare system in which both the abstract Agree relations with [$u\phi$] and [$uTOP$] are spelled out in narrow syntax as ϕ -feature agreement.

Crucially, in Austronesian languages of this type, the same set of four-way verbal inflection known as ‘voice’ is obligatorily present in relative clauses (RCs) and pseudo-clefts (whose presupposed clause is structurally a headless relative). In this RC environment, the controller of voice morphology is the relativized phrase. For example, in a pseudo-cleft where a *wh*-object is clefted, the verb inside the presupposed clause (RC) must carry patient voice morphology (-*un*), analogous to how the same affix indexes the object topic the in non-RC example (9).

(10) Seediq

Ima ka [_{RC} wada-na bbe-**un**]?
 who LK [PST-3SG.SUBJ hit-**PV**]

‘Who was the one that s/he hit?’

(object relativization)

In this paper, I first establish that these alternating affixes known as ‘voice’ are best viewed as the morphological reflex of four different parallel chain relations probing one and the same goal (topic/relativized phrase), building on the analysis proposed in Chen (2017, 2021). I then discuss similar types of portmanteau affixes reported in western Nilotic and the Caucasian language Abaza, highlighting their similarities and four foci of variation: (a) the type of \bar{A} -operation that triggers the verbal inflection, (b) number of voice distinctions (i.e. how many and which parallel chain relations are realised as verbal affixes), (c) presence or absence of ϕ -feature agreement with the goal, and (d) whether or not the goal undergoes overt \bar{A} -movement.

This observation from Austronesian and beyond yields important implications for the theories of Agree and Move. Not only does it indicate that ϕ -feature agreement is not the only available means of realizing abstract \bar{A} -Agree relations, but it also suggests that natural languages may employ portmanteau verbal affixes that realize the convergence of multiple Agree relations probing the same goal – what is known previously as ‘Austronesian-type voice’ or ‘*wh*-agreement’ constitutes agreement morphology of this type. This analysis is in line with previous \bar{A} -agreement approaches to the voice system of Austronesian languages including Chamorro and Malagasy (Chung 1994; Pearson 2005), as well as the recent proposal that all ϕ -probes are \bar{A} -sensitive and interact with \bar{A} -features on their goal (Baier 2018).

The remainder of the paper is structured as follows. Section 2 lays out the relevant basic facts about Austronesian voice. Section 3 presents specific evidence that the four-way voice morphology attested in Austronesian is the spell-out of four different parallel chains that probe the topic/relativized

phrases. Section 4 discusses a similar type of voice morphology reported in western Nilotic and Abaza, highlighting their similarities and differences with Austronesian voice. Section 5 discusses the implications and remaining questions. Section 6 summarizes and concludes.

Before proceeding, a note on terminology is in order. For clarity, I use the term ‘ ϕ -agreement’ throughout this paper to refer to the abstract Agree relation between the ϕ -probe and its goal and the term ‘ ϕ -feature agreement’ for agreement affixes that realize the ϕ -features of the goal of probe of any type.

2 Austronesian voice basics: how voice works as topic-indexing morphology

The type of topic-indexing verbal inflection to be discussed is known as ‘Austronesian-type voice’ or ‘Philippine-type voice’. The nature of this morphology has triggered a focal debate in the literature (e.g. McKaughan 1958; Ramos 1974; Schachter & Otane 1972; Keenan 1976; Schachter 1976; Ramos & Bautiste 1986; Foley & Van Valin 1984; Kroeger 1991; Richards 2000; Aldridge 2004, 2012; Rackowski & Richards 2005; Pearson 2005; Chen 2017; a.o.). Key traits of this voice system are summarized in (11).

- (11)
- a. **A syntactically pivotal phrase:** In each finite CP, there must be one and only one phrase designated the pivot. The pivot bears a specific morphological marking and/or occupies a specific linear position regardless of its grammatical relation or thematic role.
 - b. **Articulated verbal morphology:** Four-way affixal morphology on the verb alternates based on the choice of the pivot, including options for taking certain non-core phrases as pivots.
 - c. **Marking of nonpivot phrases:** Nonpivot phrases carry fixed case-marking regardless of the voice type of the clause.
 - d. **Fluid extraction restriction:** \bar{A} -extraction (relativization, including pseudo-clefting) is limited to the pivot phrase of a given clause.
 - e. **One-to-many mapping between voice and pivot selection:** the mapping between voice form and pivot designation reflects a mechanism sensitive to both the relative structural height of the pivot compared to other DPs in the clause (see section 3 for details).

Consider below four rough paraphrases in Tagalog (12a–d). Each sentence possesses a distinct topic, marked by a dedicated marker labeled as ‘pivot’ (*ang* for common nouns; *si* for personal names). The four-way voice morphology alternates for the choice of topics: subject (12a), direct object (12b), locative (12c), and topics whose grammatical role is none of the above (12d). Following conventional terminology, I refer to the four affixes as actor voice (AV), patient voice (PV), locative voice (LV), and circumstantial voice (CV). The two basic case markers are labeled as NOM and ACC, respectively, following recent accusative approaches to Philippine-type languages (Shibatani 1998; Richards 2000; Rackowski & Richards 2005; Pearson 2005; Chen 2017). The main empirical evidence for this approach is summarized in section 3.² Their properties will be discussed in section 3.

(12) Tagalog

- a. B<um>ili si AJ ng keyk mula kay Lia para kay Joy.
 buy<AV> PN.PIVOT AJ INDEF.ACC cake P₁ PN.OBL Lia P₂ PN.OBL Joy
 ‘AJ bought cake from Lia for Joy.’ (AV)

²See Payne (1982), Mithun (1994), and Aldridge (2004 et seq.) for an alternative ergative approach to Philippine-type languages and Paul & Travis (2006), Chen (2017), Chen & McDonnell (2019) for recent critiques of that approach.

- b. **Bi-bilih-in** ni AJ **ang** **keyk** mula kay Lia para kay Joy.
 CONT-buy-PV PN.NOM AJ PIVOT **cake** P₁ PN.OBL Lia P₂ PN.OBL Joy
 ‘AJ will buy *cake* from Lia for Joy.’ (PV)
- c. **Bi-bilih-an** ni AJ ng **keyk si** **Lia** para kay Joy.
 CONT-buy-LV PN.NOM AJ INDEF.ACC **cake** PN.PIVOT **Lia** P₂ PN.OBL Joy
 ‘AJ will buy cake from *Lia* for Joy.’ (LV)
- d. **I-bi-bili** ni AJ ng **keyk** mula kay Lia **si** **Joy**.
 CV-CONT-buy PN.NOM AJ INDEF.ACC **cake** P₁ PN.OBL Lia PN.PIVOT **Joy**
 ‘AJ will buy cake from Lia for *Joy*.’ (CV)

In instances of relativization, the relativized phrase controls voice morphology. Mismatch between voice and its grammatical role yields ungrammaticality. To extract the subject, direct object, locative phrase, and non-locative adjunct from a two-place clause, the verb must be marked in AV, PV, LV, and CV, respectively (13a–d). This fluid constraint is known in the literature as ‘pivot-only’.

(13) Tagalog

- a. Sino ang [RC b<um>**ili**/*-**in**/*-**an**/***i**- ng **keyk**]?
 who PIVOT [RC buy<AV>/*PV/*LV/*CV INDEF.ACC **cake**]
 ‘Who is the one that bought cakes?’ (AV; subject relativization)
- b. Ano ang [RC bi-bilih-**in**/*<um>/*-**an**/***i**- ni Lia]?
 what PIVOT [RC CONT-buy-PV/*AV/*LV/*CV PN.NOM Lia]
 ‘What is the thing that Lia will buy?’ (PV; object relativization)
- c. Nasaan ang [RC bi-bilih-**an**/*<um>/*-**in**/***i**- ni Lia ng **keyk**]?
 where PIVOT [RC CONT-buy-LV/*AV/*PV/*CV PN.NOM Lia INDEF.ACC **cake**]
 ‘Where will be the place where L bought cakes?’ (LV; locative relativization)
- d. Sino ang [RC **i**-bi-bili/*<um>/*-**in**/*-**an** ni Lia ng **keyk**]?
 who PIVOT [RC CV-buy/*AV/*PV/*LV PN.NOM Lia INDEF.ACC **cake**]
 ‘Who is the one that Lia will buy cakes for?’ (CV; benefactive relativization)

At first glance, this voice alternation is conditioned by the thematic role of the pivot: agent (AV), theme (PV), locative (LV), and benefactor/instrument (CV). However, a closer look at these languages reveals a far more complicated pattern, summarized in (14).

(14) Mapping between voice form and pivot selection in conservative Philippine-type languages³

	AV	PV	LV	CV
Unergatives	external argument	*	locative phrase	non-locative adjuncts
Unaccusatives	internal argument	*	locative phrase	non-locative adjuncts
Transitives	external argument	internal argument	locative phrase	non-locative adjuncts
Productive causatives	causer	causee	locative phrase	theme
Ditransitives	external argument	recipient	goal, source	theme
Control constructions	controler	controllee	n/a	theme
SVC	external argument	internal argument	locative phrase	non-locative adjunct

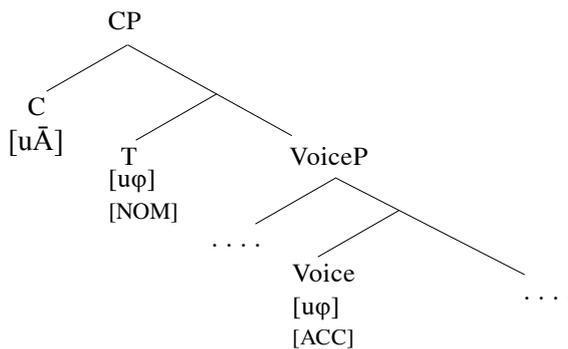
As (14) shows, the mapping between pivot designation and voice form reflects a mechanism sensitive to both the grammatical relation of the pivot and its relative structural height in a given clause. For example, a theme can render the pivot with PV morphology if no other undergoer-like

³The table presents the shared voice pattern across the majority of Austronesian primary branches and is reconstructable to early Austronesian morphosyntax. Some Malayo-Polynesian languages have developed an innovative control construction and do not exhibit the voice pattern indicated here. See, for example, Shibatani (1998) and Landau (2013) for a detailed overview of control construction in Tagalog.

argument is present in the sentence; where there is a structurally higher one in the same clause (e.g. causee or controllee), the only acceptable voice morphology for indexing the lower theme as the pivot status is CV morphology – as seen with the causative and control pattern above. The precise mechanism will be discussed further in section 3.

Building on a family of recent \bar{A} -approaches to Philippine-type voice (Shibatani 1998; Pearson 2001, 2005; Richards 2000; Chen 2017, 2021), I propose that this seemingly complex pattern can be captured via a simple and unified analysis, schematized below in (15). This proposal assumes an accusative case system and obligatory \bar{A} - (topic) agreement in each finite clause, in line with existing works cited above.

(15) Proposal: the make-up of the Austronesian-type voice system



The main ingredients of this analysis, which assumes the presence of abstract subject and object agreement in the languages under discussion, are outlined in (16).

- (16)
- a. ϕ -probe on T, probing the highest DP (i.e. the grammatical subject)
 - b. ϕ -probe on matrix Voice, probing the highest DP below Voice (i.e. the direct object)
 - c. Locative-selecting P: a specific type of P that only selects locative phrases
 - d. \bar{A} -probe on C: a flat \bar{A} -probe located in a head distinct from T, which can be valued by Agree with either [TOP] or [REL].⁴

In a system like (15)–(16), it is possible that distinct heads from separate phases may converge on a common goal, triggering what is known as *parallel chain formation* (Chomsky 2005, 2008; Collins & Essizewa 2007; Kandybowicz 2008; Aboh & Dyakonova 2009; a.o.) – given the phase transfer delay imposed by the Phase Impenetrability condition (Kandybowicz 2008; Aboh & Dyakonova 2009). The characterization of parallel chain formation is formalized in (17).

(17) *Parallel chain formation*

Two chains α and β are related by parallel chain formation if and only if:

- i. Tail (α) = Tail (β), and
- ii. Head (α) \neq Head (β) (Kandybowicz 2008:115)

Building on (17), I propose that where a phrase is probed simultaneously by $[u\bar{A}]$ and by (a), (b), or (c), the convergence of the two Agree relations is spelled out as a voice affix; where no other Agree relation converges with Agree with $[u\bar{A}]$, that Agree relation is also spelled out as a distinct verbal affix ('CV'), hence creating a four-way distinction. In this view, Austronesian-type voice is a case of different parallel chain relations spelled out as overt verbal inflections, (18a–d).

⁴This analysis follows from the recent proposal of \bar{A} -geometry (Miyagawa 2010; Aravind 2018; Baier 2018). See section 3 for details.

- (18) a. ‘AV’ morphology: spell-out of Parallel Chain A: Agree with (a) and with (d)
 b. ‘PV’ morphology: spell-out of Parallel Chain B: Agree with (b) and with (d)
 c. ‘LV’ morphology: spell-out of Parallel Chain C: Agree relation with (c) and (d)
 d. ‘CV’ morphology: spell-out of the Agree relation with (d)

Accordingly, Philippine-type Austronesian languages display a typologically rare system in which multiple parallel chain relations targeting an \bar{A} -element (topic/relativized phrase) are spelled out as distinct verbal affixes (voice), which can be viewed as a trait of discourse configurationality (Li & Thompson 1976; Miyagawa 2010, 2017; a.o.).

I begin in this section by setting up the empirical grounding of this proposal. I first present the evidence for Philippine-type voice affixes as agreement morphology hosted in the left periphery (2.1). I then provide a literature review of the topic analysis of the pivots (i.e. trigger of voice morphology) (2.2). Finally, I provide evidence for the presence of a separate head (e.g. T) that hosts the subject-driven ϕ -probe, as distinct from where [u \bar{A}] is hosted (2.3). Unless indicated otherwise, the data presented below comes from primary fieldwork on three languages spoken in Taiwan, Nanwang Puyuma, Central Amis, and Tgdaya Seediq, as well as Manila Tagalog. Each of the four belongs to a distinct primary branch of Austronesian in the consensus subgrouping.

2.1 Philippine-type voice affixes as agreement morphology hosted in the C domain

Despite existing claims that Philippine-type voice is the spell-out of functional heads (different flavors of Voice and Applicative heads) (e.g. Payne 1982; Gerds 1988; Mithun 1994; Aldridge 2004 et seq., a.o.), new comparative data has shown they are better analyzed as agreement morphology. The main evidence for this view is summarized below. See also Pearson 2001, 2005 and Rackowski 2002 for a similar claim.

In prototypical Philippine-type languages, voice morphology obligatorily surfaces on the highest verbal head per CP, as in (19), with the rest of the lexical heads carrying default voice-marking. Furthermore, the host of the voice morphology may vary from different types of lexical verbs to modals and adverbs (Chang 2023; Wu, Tan, and Roversi 2023), as in (20). This mobility and uniqueness per clause is a hallmark of agreement morphology, and contradicts a functional head analysis. Notably, a similar type of voice morphology in Nilotic, which has been analyzed as \bar{A} -agreement/extraction morphology (van Urk 2015; Erlewine et al. 2017), behaves similarly in its mobility and uniqueness per clause.

- (19) Puyuma⁵
- a. Ku-beray-**ay** na walak kana bu’ir.
 1SG.NOM-give-LV DEF.PIVOT child DEF.ACC taro
 ‘I gave *the child* the taro.’
- b. Ku-talam-**ay** \emptyset -beray na walak kana bu’ir.
 1SG.NOM-try-LV DEF-give DEF.PIVOT child DEF.ACC taro
 ‘I tried to give *the child* the taro.’
- c. Ku-trakatrakaw-**ay** t \langle em \rangle alam \emptyset -beray na walak kana bu’ir.
 1SG.NOM-secretly-LV DEFV-try DEFV-give DEF.PIVOT child DEF.ACC taro
 ‘I secretly tried to give *the child* the taro.’

⁵Here and below, I gloss the person/number-indexing morpheme on the verb that cross-references nonpivot subjects as PERSON.NUMBER.NOM (e.g. *ku* as 1SG.NOM). As will be argued in section 5.3, these morphemes are best analyzed as ϕ -agreement with the subject – according to which they are better glossed as PERSON.NUMBER.SUBJ such as 1SG.SUBJ for the marker *ku*.

(20) Paiwan

a. *Voice-marking on main verb*

'u-s<in>i-**patagilj**=anga=sun a sapay ta kaitang.
 1SG.NOM-CV-PRF-**begin**=COS=2SG.PIVOT LK <DEFV>cultivate CN.ACC field
 'I have started to cultivate the field for you.' (Wu 2013:183) (CV)

b. *Voice-marking on manner adverb*

'u-s<in>i-**galju** a tjavac a kakeDian.
 1SG.NOM-CV-<PFV> **slowly** LK <DEFV>walk CN.PIVOT child
 'I walked slowly with *the child*.' (Wu 2013:239) (CV)

c. *Voice-marking on abilitative modal*

Si-'a-**caqu** a langui a kasiw.
 CV-STAT=**be.able.to** LK swim<DEFV> CN.PIVOT wood
 'I am able to swim by means of the *woods*.' (Wu 2013:18) (CV)

Two pieces of evidence suggest that this agreement morphology is hosted high in the left periphery. First, Philippine-type languages impose a common constraint in which voice morphology is obligatorily inserted into aspect morphology and not the lexical verbal stem. Assuming the Mirror Principle holds, this suggests that voice morphology is hosted in a projection higher than Aspect. Consider examples below from Puyuma and Paiwan. Both require the AV infix to be inserted into the aspect morphology (i.e. first syllable of the verb complex) (22).

(21) a. Puyuma

Da-deru i atrung dra patraka.
 <AV>PROG-cook PN.PIVOT Atrung INDEF.ACC meat
 'Atrung is cooking meat.' (AV)

b. Paiwan

Siu-siup ti zepul nu siaw.
 <AV>HAB-suck PN.PIVOT Zepul IRR.TEMP <AV>soup
 'Zepul sucks (it) when she eats soup.' (Chang 2006:54) (AV)

Second, as the voice paradigm (22) shows, such Philippine-type voice affixes inflect for mood. A three-way mood inflection is reconstructable to Proto-Austronesian (or an early stage immediately after its split) and commonly found across conservative Philippine-type languages. In Puyuma, for example, LV surfaces as the suffix *-ay* in indicative clauses and *-i* in imperatives (23a-c).

(22) Early Austronesian voice morphology (Ross 2009, 2012; Blust & Chen 2017)

	a. AV	b. PV	c. LV	d. CV
a. indicative	*<um>	*-en	*-an	*Si-/Sa-
b. optative, hortative	*-a	*-aw	*-ay	*-anay
c. imperative, negative	*-∅	*-u	*-i	*-an

(23) Puyuma

a. Ku-beray-**ay** i senten dra paysu.
 1SG.NOM-give-LV.**IND** PN.PIVOT Senten INDEF.ACC money
 'I gave *Senten* money.' (LV indicative)

b. Beray-**i** i senten dra paysu!
 give-LV.**IMP** PN.PIVOT Senten INDEF.ACC money
 'Give *Senten* money!' (LV imperative)

As Mood is standardly assumed to be hosted above T (Rivero & Terzi 1995; Han 2001; Noonan 2007), this inflection lends support to the view that voice is hosted high in the C domain, which is commonly assumed in existing \bar{A} -agreement approaches to Philippine-type languages (see Chung 1994; Pearson 2005; contra Aldridge 2004 and Rackowski & Richards 2005).

2.2 Pivots as topics in non-RC environments

Further evidence for voice being located in the left periphery comes from the pivot's \bar{A} -behaviors (recall that the pivot is what the voice morphology indexes). Following existing analyses within and outside the generative framework (Shibatani 1998; Richards 2000; Pearson 2001, 2005; Rackowski 2002; Katagiri 2006; Erlewine 2014; Chen 2017; Paul & Massam 2021), I assume that the pivots are \bar{A} -topics in non-relative-clause environments. Despite minor analytical differences among authors, a consensus among these works is that (i) the pivot is an \bar{A} -element bearing a specific information structure status roughly equivalent to the general definition of topic in the typological literature, and (ii) the pivot is located in the left periphery and agrees with an \bar{A} -probe. I follow this assumption without committing to a particular information structure property.

This analysis is supported by two types of evidence. First, across five better-studied languages, Malagasy, Tagalog, Puyuma, Amis, and Seediq, promotion-to-pivot shows typical \bar{A} -properties. This is illustrated with examples below from Tagalog. (24a) demonstrates an instance of reconstruction for Principle C, in which the object pivot 'herself' (boldfaced) in the PV sentence is interpreted in its θ -position and surfaces as a reflexive pronoun bound by the R-expression 'Lia' in the external argument. This is a typical \bar{A} -property that serves as handy diagnostics for \bar{A} -operations (van Urk 2015).

(24) Tagalog: Reconstruction for Principle C

Hindi p<in>igil ni Lia **ang sarili niya** (na k<um>ain).
 NEG <PV.PFV>control PN.NOM Lia PIVOT self 3SG.POSS (LK eat<AV>)

'Lia cannot stop herself from eating.' (Patient Voice)

Example (25) shows that promotion-to-pivot does not create a new antecedent for anaphor, another typical \bar{A} -property (van Urk 2015). Here, the object topic/pivot 'Juan' fails to bind the external argument reflexive ('himself'), suggesting that the process of promotion-to-pivot does not render the object topic a binder. This invariable pattern is distinct from A-movements such as raising, which creates an antecedent capable of binding a pronoun that is base-generated higher than the trace position of the A-moved element, as in (26).

(25) *No new antecedent for anaphor*

*Sa-sampal-**in** ng kanyang sarili si Juan.
 CONT-slap-PV CN.NOM 3SG REFL PN.PIVOT Juan

(intended: Himself will slap *Juan*.) (Patient Voice)

(26) John_i seems to himself [_i to be intelligent].

A third typical \bar{A} -property concerns the co-occurrence of weak crossover and sporadic instances of weakest crossover in Tagalog's promotion-to-pivot operations. As (27a) shows, promotion-to-pivot in Tagalog typically displays weak crossover effect, whereby the universal quantifier 'every' fails to bind a pronominal external argument after being promoted to pivot through covert \bar{A} -movement across that argument. This reinforces the generalization above that promotion-to-pivot usually does

not alter the binding relations within a clause. However, primary fieldwork reveals sporadic cases of weakest crossover (Lasnik & Stowell 1991), in which an R-expression object may be interpreted as the antecedent of a picture NP reflexive after being promoted to pivot status, as in (27b). As Lasnik and Stowell note, the co-occurrence of these two effects is a hallmark of \bar{A} -operation. See Pearson (2001, 2005) and Chen (2017, 2021) for a discussion of similar binding facts in other Philippine-type languages.

(27) Tagalog

a. *Weak Crossover*

M<in>amahal ng kanyang_i ama ang bawat anak_i.
 love<PV,PFV> CN.NOM his father CN.PIVOT every child
 ‘His_i father loves every child_{<j/?i>}.’ (Richards 2000:114) (Patient Voice)

b. *Weakest Crossover*⁶

(?)P<in>atay ng sarili niyang inay si Riza.
 <PV,PFV>kill PN.NOM self 3SG.POSS mother PN.PIVOT Riza
 ‘The mother of himself_{<k>} killed Riza_{<k>}.’ (Patient Voice)

Second, many Philippine-type languages impose an argument-marking restriction in question-answer sequences: the discourse topic must be placed as the pivot in the answer; mismatch results in unnaturalness/unacceptability. Consider, for example, four spontaneous answers to the question ‘Where is Lia’s spoon?’(24a) in Tagalog. All four answers have the discourse topic in pivot status. This reveals a tight connection between topichood and pivot designation. See Chen (2017) for a discussion of the same constraint in three Philippine-type Formosan languages.

(28) Tagalog

- a. Na saan **ang kutsara** ni Lia?
 NA where CN.PIVOT spoon PN.POSS Lia
 ‘Where is Lia’s spoon?’ (discourse topic: Lia’s spoon)
- b. Gamit ni Lia (**ang kutsara**).
 use.PV PN.NOM Lia (PN.PIVOT spoon)
 ‘Lia is using (it/the spoon).’ (↔ topic as a theme pivot)
- c. I-p<in>ang-ka-kain ni Ryan (**ang kutsara**).
 CV-PANG<PFV>-RED-eat PN.NOM Ryan (CN.PIVOT spoon)
 ‘Ryan is eating with (it/the spoon)’ (↔ topic as an instrument pivot)
- d. Na-kita=ko=[ng k<in>uha ni Ivan (**ang kutsara**)].
 PFV.PV-see=1SG.NOM=[LK steal<PV,PFV> PN.NOM Ivan (CN.PIVOT spoon)]
 ‘I saw that Ivan stole (it/the spoon).’ (↔ topic as an embedded pivot)
- e. Na kay Peter (**ang kutsara**).
 NA with Peter (CN.PIVOT spoon)
 ‘The spoon is with Peter.’ (↔ topic as an existential pivot)

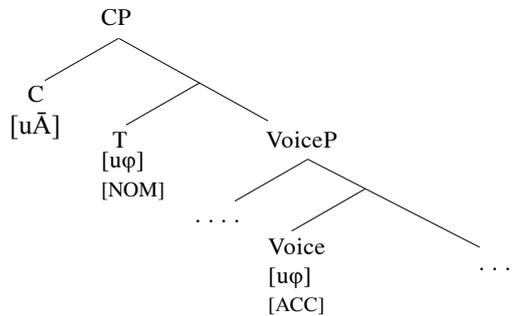
2.3 Evidence for a separate subject/nominative position

I turn now to the third component for the proposal in (15), repeated below in (29): that alongside the \bar{A} -probe on C (or a specific left peripheral head) that agrees with the pivot, there is a distinct head that

⁶A clear case of asymmetry is attested in primary fieldwork, that the acceptability of this sentence greatly improves where the intended object binder is in pivot status – where the sentence is placed in AV with the same R-expression constituting a nonpivot object, the sentence renders 100% unacceptable with the intended binding relation being unavailable.

hosts a ϕ -probe, which agrees with the highest DP per clause, triggering abstract subject agreement. I label this head as T and assume that Agree with this head is accompanied by nominative Case assignment and movement to [Spec, TP].

(29) Proposal: the make-up of the Austronesian-type voice system



Evidence for the presence of a subject/nominative position comes from the distribution of the case-marking labeled as NOM – which displays a hallmark of structural nominative case: its distribution is not tied to the external argument position. As seen below, NOM can appear either on the external argument in unergatives/transitives or the internal argument in unaccusatives, as in (30)–(31). This indicates this marker does not realize inherent ergative case (contra the ergative analysis of these languages), which is assigned only to external arguments along with θ -licensing.

(30) Tagalog

- a. Ni-lakar-an **ni Ivan** ang daan.
 PFV-walk-LV **PN.NOM Ivan** CN.PIVOT road
 ‘Ivan walked on the road.’ (NOM on unergative subjects)
- b. H<in>ulug-an **ni Ivan** ang swimming pool.
 fall<PFV>LV **PN.NOM Ivan** CN.PIVOT swimming pool
 ‘Ivan fell into the swimming pool.’ (NOM on unaccusative subjects)

(31) Seediq

- a. P-puyas-an **na laqi** ka sapah-mu.
 IRR-sing-LV **NOM child** PIVOT house-1SG.POSS
 ‘The children will sing in my house.’ (NOM on unergative subjects)
- b. H-huqil-an **na riso** nii ka Paran.
 IRR-die-LV **NOM young.man** this PIVOT Paran
 ‘This young man will die in Paran.’ (NOM on unaccusative subjects)

This marker shows two other key traits of nominative case: it is unique per clause and restricted only to the highest DP per CP. Consider below examples of bi-eventive causatives in four Philippine-type languages. In all four languages, this marker cannot appear on the causee – which is c-commanded by the causer as suggested by binding diagnostics (Chen & Fukuda 2017; see also Travis 2000 and Rackowski 2002 for the same analysis for Tagalog).

(32) NOM as unavailable to embedded external arguments

- a. Sa-pa-pi-nengneng aku **tu/*nu** ising k-una pusi.
 CV-CAUS-PI-see 1SG.NOM ACC/*NOM doctor PIVOT-that cat
 ‘I will ask *the doctor* to look at the cat.’ (Amis)
- b. S-p-tinun=mu **∅/*na** robo ka lukus.
 CV-CAUS-weave=1SG.NOM ACC/*NOM Robo PIVOT clothes
 ‘I asked *Robo* to sew the clothes.’ (Seediq)

- c. I-p<in>a-nakaw=ko kay/*ni juan ang kotse.
CV-CAUS<PFV>steal=1 SG.NOM PN.ACC/*PN.NOM Juan PIVOT car
'I asked *Juan* to steal the car.' (Tagalog)
- d. ku=*tu=pa-saletra'-anay i senten.
1 SG.NOM=*3.NOM-CAUS-slap-CV PN.PIVOT Senten
'I asked *him/her* to slap Sawagu.' (Puyuma)

This restriction is unexpected if this marker realizes inherent ergative Case – which has been shown available to the causee in bi-eventive causatives. See (33a–b) for instances of ergative-marked causees in productive causatives in the ergative languages Trumai (isolate) and Macushi (Carib).

- (33) Ergative case as available to embedded external arguments
- a. Amati-**k** chī_in tata-**k** karakarako taf kiṭi ka ha wan-li.
Amati-**ERG** FOC/TENS Tata-**ERG** chicken egg.ABS give CAUS 1 PL-DAT
'Amati made Tata give us chicken eggs.' (Guirardello 1999:356) (Trumai)
- b. Imakui'pī kupi jesus-**ya** emapu'ti yonpa-'pī makiu-**ya** teuren.
bad do Jesus-**ERG** CAUS try-PST Satan-**ERG** frustr
'Satan unsuccessfully tried to make Jesus do bad.' (Abbott 1991:40) (Macushi)

The nominative behaviors of the marker under discussion thus lend strong empirical support for the existence of an A-position external to VoiceP in Philippine-type Austronesian languages, in line with the current proposal (29). Notably, in many languages of this type, the NOM-marked DP is cross-referenced by a person/number-indexing marker on the verb. I provide specific arguments in 5.2 that this marker is exactly ϕ -feature agreement with the nominative subject.

3 Two probes, one goal: Philippine-type voice as the reflex of four parallel chain relations

So far we have arrived at four generalizations of Philippine-type voice (34a–d).

- (34) a. Voice affixes behave like agreement morphology hosted above T/Aspect.
b. The controller of voice morphology is always an \bar{A} -element (topics in non-RC environments; relativized phrases in RCs).
c. There is independent evidence for the presence of a subject/nominative position.
d. Voice morphology alternates for the grammatical role of the topic/relativized phrase.

Below I present specific evidence for two subsequent questions: What does each of the four voice affixes realize?, and what syntactic device drives Philippine-type voice alternation?

3.1 Mapping between voice and pivot section

A closer look at the mapping between voice selection and the grammatical role of the pivot reveals the pattern in (35).

(35) Mapping between voice form and pivot selection in Philippine-type languages

	AV	PV	LV	CV
Unergatives	external argument	*	locative phrase	non-locative adjuncts
Unaccusatives	internal argument	*	locative phrase	non-locative adjuncts
Transitives	external argument	internal argument	locative phrase	non-locative adjuncts
Productive causatives	causer	causee	locative phrase	theme
Ditransitives	external argument	recipient	goal	theme
Control constructions	controler	controllee	n/a	theme
SVC	external argument	internal argument	locative phrase	non-locative adjunct
Generalization	pivot as subject	pivot as DO	pivot as locative	pivot as anything else

Pre-theoretically, this pattern shows a four-way division among subjects, direct objects, locative phrases, and phrases that bear a role that is none of the above. That is, where the pivot also constitutes the grammatical subject, direct object, locative phrase, or none of the above, it correlates with the presence of AV, PV, and LV morphology, respectively. Where the pivot bears a role that is none of the above – such as instrument, benefactor, reason, or a DP that is structurally lower than the direct object (e.g., theme in causatives and control constructions), it triggers CV morphology.

This four-way distinguished voice system can be captured under the analysis in (36).

(36) *Proposal: Austronesian-type voice as the spell-out of four parallel chain relations*

Where a phrase is probed simultaneously by $[u\bar{A}]$ and an A-probe, the convergence of two abstract Agree relations is realized as verbal morphology:

‘AV’: morphological reflex of Parallel Chain Relation A: Agree with $[u\bar{A}]$ and with $[u\phi]$ on T

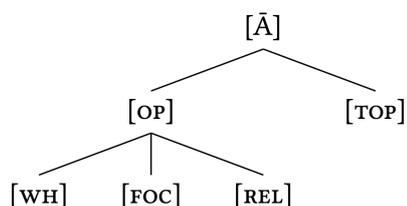
‘PV’: morphological reflex of Parallel Chain Relation B: Agree with $[u\bar{A}]$ and with $[u\phi]$ on matrix Voice

‘LV’: morphological reflex of Parallel Chain Relation C: Agree with $[u\bar{A}]$ and with $[u\phi]$ on P_{Loc}

‘CV’: morphological reflex of the Agree relation with $[u\bar{A}]$

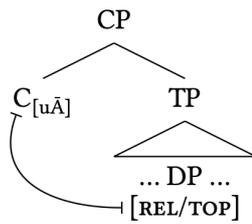
The postulation of a flat \bar{A} -probe follows from the proposal of \bar{A} -feature geometry. As proposed by much recent work (Miyagawa 2010; Aravind 2018; Baier 2018), \bar{A} -features such as [WH], [REL], [FOC], and [TOP] are hierarchically arranged, whereby probes may be relativized to different places on this hierarchy (37).

(37) \bar{A} -feature geometry



On this approach, a probe may be satisfied by an \bar{A} -feature (represented $[u\bar{A}]$) or a feature lower down on the hierarchy, such as [TOP] and [REL]. Following a recent proposal by van Urk (2015) and an earlier insight from Kuno (1973) that in many languages, relativization and topicalization cannot co-occur in the same clause, I propose that topicalization and relativization in Philippine-type Austronesian languages are driven by one and the same flat \bar{A} -probe. This proposal is schematized in (38).

(38) Proposal: [$u\bar{A}$] as a flat probe that agrees with either [top] or [REL]



In this view, Philippine-type languages’ obligatory use of voice morphology and their ‘pivot-only’ constraint in relativization is essentially not an extraction constraint, but the manifestation of the same set of parallel chain relations spelled out as verbal morphology – under the assumption that the same parallel chains can also be driven either by topicalization or relativization. See van Urk (2015) for a prior analysis for a similar extraction restriction in Dinka.

Below I present specific evidence for the analysis of each voice in 3.2–3.5.⁷

3.2 ‘Actor Voice’ as the spell-out of parallel chains with [$u\bar{A}$] and [$u\phi$] on T

Descriptively, AV morphology appears when the pivot is the grammatical subject of a given clause. In other words, this morphology occurs where the topic or the REL-phrase of the sentence is simultaneously the (i) external argument in an unergative/transitive/ditransitive, (ii) causer of a productive causative, (iii) controller of a control construction, or (iv) internal argument in an unaccusative and detransitive. The examples below illustrate this distribution in Puyuma.

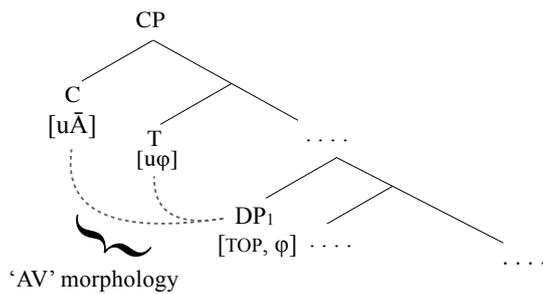
(39) Puyuma

- a. **M**-uarak na walak i arasip.
 AV-dance DEF.PIVOT child LOC Arasip
 ‘Atrung danced in Arasip.’ (AV unergative)
- b. **M**-ekan na bangsaran dra patraka.
 AV-eat DEF.PIVOT young.man INDEF.ACC meat
 ‘The young man ate some meat.’ (AV transitive)
- c. **M**-u-ekan na patraka.
 AV-DETR-eat DEF.PIVOT meat
 ‘The meat was eaten up.’ (AV detransitive)
- d. **M**<in>atray na bangsaran.
 AV<PFV>die DEF.PIVOT young.man
 ‘That young man died.’ (AV unaccusative)

I propose that this morphology is the spell-out of the parallel chains driven by pivot’s Agree relations with [$u\bar{A}$] on C and [ϕ] on T, as in (40).

⁷See Chen (2017, 2021) for a summary of empirical challenges for existing alternative approaches to this voice system, such as the ergative approach (Payne 1982; Mithun 1994; Aldridge 2004 et seq.) and the case agreement approach (Rackowski & Richards 2005).

(40) “AV” morphology: When the subject is also the topic/relativized phrase



Two important characteristics of AV morphology follow from this analysis: the AV morphology is sensitive to locality and can only target the highest agent per CP while not insensitive to the thematic role of the pivot.

3.3 ‘Patient Voice’ as the spell-out of parallel chains with $[u\bar{A}]$ and $[u\phi]$ on Voice

The distribution of PV morphology is also sensitive to the relative structural height of the pivot – the pivot must be the second highest DP in a given clause (as evidenced by binding facts).⁸

Possible triggers of PV morphology therefore include (i) the internal argument of simple transitives (41a), (ii) causee of productive causatives (41b), (iii) controllee in control constructions (41c), and (iv) recipient in double object constructions (41d). Internal arguments that are structurally lower than the second-highest DP, such as the theme in causative and control constructions, is unable to trigger PV morphology. Internal arguments that are not the second highest DP per clause, such as unaccusative themes, cannot trigger PV morphology either.

(41) Amis

- a. Tangtang-**en** ni Lisin **k-u** **titi**.
 cook-PV PN.NOM Lisin PIVOT-that **pork**
 ‘Lisin will cook *that* pork.’ (PV transitive)
- b. Pa-pi-takaw-**en** aku **k-una** **wawa** t-una paysu.
 CAUS-PI-steal-PV 1SG.NOM PIVOT-that **child** ACC-that money
 ‘I will ask *that* child to steal that money.’ (PV causative)
- c. Lalang-**en** aku **ci** **mama** mi-palu t-u wawa.
 dissuade-PV 1SG.NOM PN.PIVOT father AV-beat ACC-that child
 ‘I dissuade father from beating the child.’ (Wu 2006:375) (PV control)
- d. Pafeli-**en** aku **k-una** **wawa** t-una paysu.
 give-PV 1SG.NOM PIVOT-that **child** ACC-that money
 ‘I gave *the* child that money.’ (PV ditransitive)

This locality-sensitive distribution patterns consistently with object agreement across languages. As noted by Baker (2012) and subsequent works, abstract object agreement is characterized by three traits: (i) uniqueness per clause, (ii) sensitivity to locality: only the highest DP below the matrix Voice may trigger the agreement, and (iii) inability to probe into PPs. Consider two examples below from Amharic, where object agreement can only target the recipient – the higher internal argument – in the double object ditransitives (42b); similarly, in Amharic productive causatives, object agreement can only target only the causee and not the theme (42b), displaying a distribution analogous to Philippine-type PV morphology in Austronesian (41b–d).

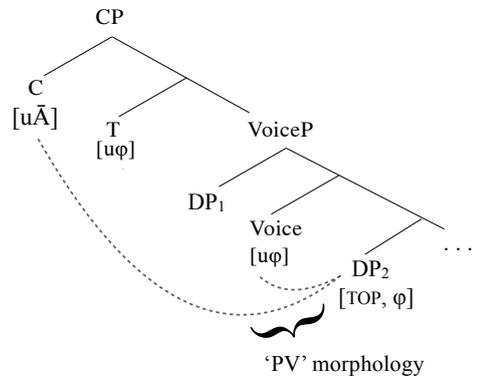
⁸For specific discussions of the binding facts that gives rise to this generalization, see Chen 2017 as well as Pearson 2001, 2005, and Rackowski 2002, for data from Tagalog, Malagasy, Puyuma, Amis, and Seediq.

(42) Amharic

- a. Ləmma l-Almaz məs'əhaf-u-n sət't'-at.
 Lemma DAT-Almaz book-DEF-ACC give-(3MS)-**3FO**
 'Lemma gave the book to *Almaz*.' (Baker 2012:258)
- b. Aster kwas-a-n as-metaitf-ññ.
 Aster ball-DEF.ACC CAUS-hit-3FEM.S-**1SG.O**
 'Aster made *me* kick the ball.' (Duncan & Aberra 2009)

Assuming PV morphology's shared distribution with object agreement is not a coincidence, I argue that PV morphology is best analyzed as the parallel chain relations under Agree with both $[u\bar{A}]$ and $[u\phi]$ on Voice/*v*, which drives abstract object agreement. In other words, where the direct object of a clause is also the pivot, PV morphology appears to index the two Agree relations probing that object. This analysis is illustrated in (43).

(43) PV: When the DO is also the topic/relativized phrase



The fact that some some Philippine-type languages exhibit overt ϕ -feature agreement with the direct object lends further empirical support to this assumption. See section 5.2 for details.

3.4 'Locative Voice' as the spell-out of parallel chains with $[u\bar{A}]$ and $[u\phi]$ on P_{LOC}

The distribution of LV morphology is conditioned simply by the presence of a locative pivot – it occurs when the pivot of a clause is a locative phrase. Eligible triggers of this morphology thus include locative adjuncts or the goal or source in ditransitives.⁹ Some examples from Paiwan are given in (44).

(44) Paiwan

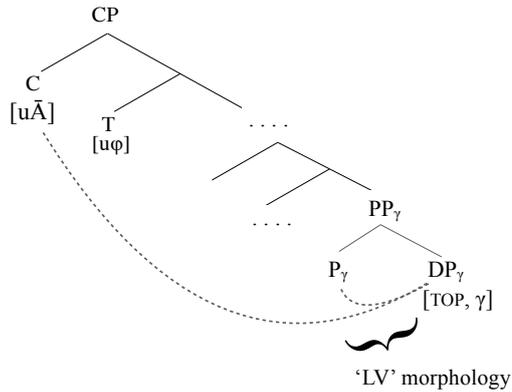
- a. Qalup-**an** nua caucau tua vavuy **a gadu**.
 hunt-LV CN.NOM man CN.ACC pig CN.PIVOT mountain
 'The man hunts wild pigs in *the mountains*' (Ferrell 1979:202) (LV transitive)
- b. P<in>a-pana?-**an a icu a i maza ni palang tay kui ta**
 CAU<PRF>-shoot-LV PIVOT **this LK LOC here** PN.NOM Palang PN.ACC Kui CN.ACC
 zua venan.
 that deer
 'Palang made Kui shoot that deer *here*.' (Chang 2006:195) (LV causative)

⁹To the best of my knowledge, Philippine-type languages differ in the use of PV or LV morphology for recipient pivots. According to primary fieldwork, the choice does not reflect structural differences (evidenced by the invariable binding facts between the recipient and the theme), and is more likely to be language-specific preference and some languages allow either PV or LV for the same ditransitive verb with the same pivot selection.

- c. $\text{?<in>aLap-an ti zepul ta za paysu ni lavakaw.}$
 <PFV>take-LV PN.PIVOT **Zepul** CN.ACC that money PN.NOM Lavakaw
 ‘Lavakaw took money from *Zepul*.’ (Chang 2006:74) (LV ditransitive)

This distribution is captured through the analysis in (45), that LV morphology is the spell-out of the parallel chains under Agree with $[\bar{u}\bar{A}]$ and that with a ϕ -probe on a locative-selecting P, labeled as P_{LOC} .

- (45) LV: When the locative phrase is also the topic



This proposal follows from the well-known fact that various Philippine-type languages employ a dedicated preposition for locative phrases that does not mark other types of adjuncts, which is reconstructable to Proto-Austronesian *i as a locative-marking preposition.

3.5 ‘Circumstantial Voice’ as the morphological reflex of Agree with $[\bar{u}\bar{A}]$

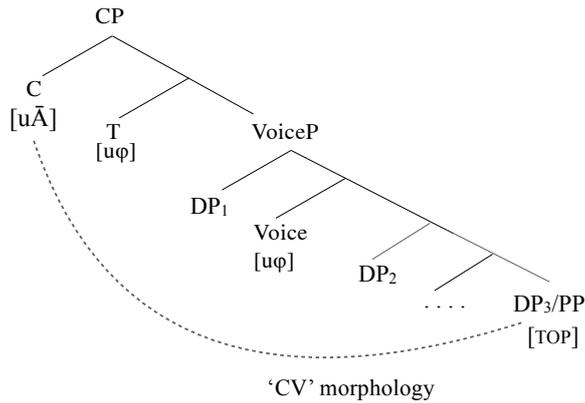
Unlike the other three voices, CV morphology cannot be characterized by any specific grammatical relation borne by the pivot. Instead, eligible triggers of this morphology range from DPs that are structurally lower than the direct object (e.g. themes in double object ditransitives, causatives, and control constructions) to various types of non-locative adjuncts, such as benefactor, instrument, reason, purpose, manner, or degree. This flexibility is illustrated with the Paiwan examples in (46).

- (46) Paiwan

- a. **Si-qihul=si'** hiya' 'i' \emptyset -pa-patas ku' ruas.
 CV-force=2SG.NOM 3SG.ACC LK AV-CAUS-write CN.PIVOT book
 ‘You forced him to read *the book*.’ (Wu 2013:155) (CV control)
- b. **Ku=s<in>i-pa-?alup** tay palang a icu a vavuy.
 1SG.NOM=CV<PFV>-CAUS-hunt PN.ACC Palang CN.PIVOT this LK boar
 ‘I made Palang hunt *this wild pig*.’ (Chang 2006:193) (CV causative)
- c. 'u-s<in>i-vaik a qaljum ta vavuy ti Kapi.
 1SG.NOM-CV-PFV-go LK <AV> CN.ACC wild.pig PN.PIVOT Kapi
 ‘I went hunting wild pigs with *Kapi*.’ (Wu 2013:182) (CV SVC)
- d. 'u-s<in>i-patagilj=anga=sun a sapay ta kaitang.
 1SG.NOM-CV-PFV-begin=COS=2SG.PIVOT LK <AV>cultivate CN.ACC field
 ‘I have started to cultivate the field for *you*.’ (Wu 2013:183) (CV transitive)

This one-to-many mapping suggests that CV morphology may be a last-resort agreement and not the morphological reflex of a specific type of parallel chain relations. I propose accordingly that this morphology is the spell-out of the abstract Agree relation with $[\bar{u}\bar{A}]$ where the goal is not under Agree relation with any other probes. This condition is schematized in (47).

(47) CV morphology as the spell-out of absence of parallel chain



This proposal offers a simpler alternative to the applicative approach to CV morphology, which, as pointed out in recent works, faces empirical and theoretical issues (Kuo 2015; Chen 2017, 2021, 2022). It also captures the parallel distribution of AV and PV morphology with abstract subject and object agreement on the one hand, and the one-to-many mapping between the CV affix and possible pivot roles on the other.

In this view, Austronesian-type voice is the spell-out of the convergence of A- and \bar{A} -Agree relations on the same goal. This system thus fits well with the notion of discourse-configurationality put forward in Lee & Thompson (1976) and subsequent works (É Kiss 1995; Miyagawa 2010, 2017). On this account, the four voices can be better described as ‘subject topic construction’, ‘object topic construction’, ‘locative topic construction’, and ‘circumstantial topic construction’, respectively – in line with the labels used for a similar voice system found in western Nilotic.

4 Voice and wh-agreement in Nilotic and Caucasian

Two western Nilotic languages, Dinka and Kurmuk, exhibit a three-way distinguished voice system that share a number of hallmarks of Austronesian-type voice (Anderson 1991, 2007, 2015; van Urk 2015; Erlewine et al. 2019). Consider below voice alternation in these two languages.

- (48) a. Kurmuk
 ṭáarák ⁺bóor-ú dɛɛl kɫɲiɹ.
 person skin-PST. **SUBJ.T** goat PREP knife
 ‘The man skinned a goat with a knife.’ (subject topic)
- b. dɛɛl bóor-út-ì ɲl ṭáarák kɫ ɲiɹ.
 goat skin-PST-**OBJ.T** NOM person PREP knife
 ‘The man skinned *the* goat with a knife.’ (object topic)
- c. ɲiɹ bóor-út-⁺í dɛɛl ɲl ṭáarák
 knife skin-PST-**OBL.T** goat NOM person
 ‘The man skinned a goat with *the* knife.’ (Anderson 2015:510) (oblique topic)
- (49) Dinka
- a. Àyén à-càm **cuɲin** nɛ pǎal.
 Ayen 3s-eat.**SV** food P knife
 ‘Ayen is eating food with a knife.’ (subject voice)
- b. Cuɲin à-**céem** Áyèn nɛ pǎal.
 food 3s.eat-**OV** Ayen.GEN P knife
 ‘Food, Ayen is eating with a knife.’ (object voice)

- c. Pǎal à-**céemè** Áyèn cuḥin
 knife 3s-eat.OBLV Ayen.GEN food
 ‘With a knife, Ayen is eating food.’ (van Urk 2015:61) (oblique voice)

In both languages, three-way verbal morphology alternates for the grammatical role of the topic.¹⁰ This voice system is characterized by the traits in (50) (Anderson 1991, 2015, 2007; van Urk 2015). Note the similarities between these traits and those of Austronesian voice outlined in sections 2 and 3.

(50) *Core traits of Dinka’s and Kurmuk’s voice system*

- a. Three-way verbal morphology indicating the grammatical role of the topic (i.e. subject, direct object, or others)
- b. Accusative case system
- c. Oblique Voice as a last-resort voice that can target topics of different grammatical roles
- d. Voice obligatorily present on the highest verbal head, with default marking on all lower heads, as seen in (50).
- e. Same set of voice alternation occurs in other \bar{A} operations such as relativization and *wh*-extraction, as seen in (51).

(51) Dinka

- a. Cuḥin à-**céem** Áyèn nè pǎal.
 food 3s.eat-OV Ayen.GEN P knife
 ‘Food, Ayen is eating with a knife.’ (van Urk 2015: 61) (Object Voice)
- b. Cuḥin à-**dóoc** Ból cǎam
 food 3s-**do.quickly.OV** Bol.GEN eat.NF
 ‘Food, Bol is eating quickly.’ (van Urk 2015:84) (Object Voice)
- c. Cuḥin à-**cḥi** Áyèn [_{VP} cǎam nè pǎal].
 food 3s-**PRF.OV** Ayen.GEN eat.NF P knife
 ‘The food, Ayen has eaten with a knife.’ (van Urk 2015:96) (Object Voice)

(52) Dinka

- a. Yè nà **cé** cuḥin cǎam?
 be who PRF.SV food eat.NF
 ‘Who has eaten the food?’ (van Urk 2015:96) (Subject *wh*-question)
- b. tíŋ [CP **cé** Ból tíŋ]
 woman.CS [**PERF.SV** Bol see.NF]
 ‘the woman that has seen Bol’ (van Urk 2015:97) (Subject relativization)
- c. Yè nǒ **cḥi** Ból cǎam?
 be what **PRF.OV** Bol.GEN eat.NF
 ‘What has Bol eaten?’ (van Urk 2015:98) (Object *wh*-question)
- d. tíŋ [CP **cḥi** Ból tíŋ]
 woman.CS [**PERF.OV** Bol.GEN see.NF]
 ‘the woman that Bol has seen’ (van Urk 2015:97) (Object relativization)

A similar type of verbal inflection is also found in the Caucasian language Abaza (ISO 639-3 abq). Abaza exhibits a type of verbal morphology known as *wh*-agreement, which inflects for the grammatical role of a variety of \bar{A} -elements including topics, relativized phrases, and *wh*-phrases (O’Herin

¹⁰In Dinka, topics simultaneously show subject properties, which has been captured through the analysis of [u \bar{A}] and [uTOP] hosting in the same head. This is beyond the focus of this paper. What is important here is that Dinka’s voice morphology inflects for the grammatical role of the goal of an \bar{A} -probe – similar to how voice works in Austronesian.

1993, 2002). In this ergative language, the affixal alternations on the verb distinguish between the absolutive DPs, non-absolutive arguments (the ergatives and various types of indirect objects), and at least three other verbal affixes targeting different types of adjuncts (temporal, locative, and manner).

This agreement system is illustrated below with examples of relativization reported in Arkadiev & Caponigro (2020). The ‘voice affix’ *j-*, roughly equivalent to Austronesian Actor Voice or the subject voice in western Nilotic, appears where the head noun is an absolutive DP. This includes the sole phrase of intransitives (53a) and ditransitive themes (53b).¹¹

(53) Abaza

- a. [awaʔa **j-**ʕa-ta-ɣa-k^wa-z] abaza-k^wa rak^wa-ḥ
 [there **REL.SUBJ**-CSL-LOC-remain-PL-PST.NFIN] Abaza-PL 3PL.IO-COP-NPST-DCL
 ‘those who remain there are the Abaza’ (ABS RC (S))
- b. [a-ph^wəspa **j-**lə-s-tə-z] a-ḥa
 [DEF-girl **REL.SUBJ**-3SG.F.IO-1SG.ERG-give-PST.NFIN] DEF-apple
 ‘the apple I gave to the girl’ (Arkadiev & Caponigro 2020:7) (ABS RC (O))

Where the relativized phrase is the ergative agent, an indirect object (IO), or an applied object (AO), the verb carries a distinct ‘voice affix,’ *z-* (or its allomorph *zə-*) (54a–c).

- (54) a. [a-ph^wəspa ḥa lə-**z**-tə-z] a-ḥ^wḥəwən
 [DEF-girl apple 3SG.F.IO-**REL.NSUBJ**-give-PST.NFIN] DEF-boy
 ‘the boy who gave an apple to the girl’ (Non-ABS RC (A))
- b. [ḥa **z**-s-tə-z] a-ph^wəspa
 [apple **REL.NSUBJ**-1SG.ERG-give-PST.NFIN] DEF-girl
 ‘the girl whom I gave an apple.’ (Non-ABS RC (IO))
- c. d-h^wa [jə-**z**-zə-b-ɣ^wʕa-z]
 3SG.H.ABS-say(IMP) [3SG.N.ABS- **REL.NSUBJ**-BEN-2SG.F.ERG-buy-PST.INFIN]
 ‘Say whom you bought it for!’ (Arkadiev & Caponigro 2020:7) (Non-ABS RC (AO))

Adjunct relativization also employs several different verbal affixes conditioned by the thematic role of the adjunct – *ʔa-* (locative), *an-* (temporal), or *š* (manner). consider (55a–c).

- (55) a. [a-karbəʒ^ʔ-k^wa **ʔa**-də-r-baɣ-wa-z] a-baḥ
 [DEF-brick-PL **REL.LOC**-3PL.ERG-CAUS-dry-IPF-PST.NFIN] DEF-shed
 ‘the shed where bricks are made’ (Locative RC)
- b. [l-an **d-an**-ʕa-j-ɣ] asqan
 [3SG.F.IO-mother 3SG.H.ABS-**REL.TEMP**-CSL-go-RE] DEF.time
 ‘at the time when her mother came back’ (Temporal RC)
- c. [d-š^ʔ-š^ʔ-ʔa-z] a-pš-ta
 [3SG.H.ABS-**REL.MNR**-lie-PST.NFIN] 3SG.N.IO-be.like-ADV
 d-š^ʔʔalɣə-n
 3SG.H.ABS-lie.down-RE-PAST.FIN
 ‘He lay down like he lay before.’ (Arkadiev & Caponigro 2020:8) (Manner RC)

The table below summarizes the division in verbal morphology in Abaza, Dinka/Kurmuk, and Austronesian. Despite differences in the patterning of adjuncts and syntactically less prominent DPs that rank lower on the Accessibility Hierarchy (Keenan & Comrie 1977), all languages employ a

¹¹In Arkadiev & Caponigro (2020), the prefix *j-* is glossed as REL.ABS. I have glossed it as REL.SUBJ here to reflect the fact that this agreement system is not case-conditioned, as shown by the fact that ergative DPs and different types of indirect objects share the same voice affix.

specific verbal affix for the nominative/absolutive and at least one other verbal affix for DPs that rank lower on the hierarchy.

	Subjects	Direct objects	Lower DPs	Locatives	Other adjuncts
(56) Austronesian	Voice 1	Voice 2	Voice 4	Voice 3	Voice 4
Dinka/Kurmuk	Voice 1	Voice 2	?		Voice 3
Abaza	Voice 1	Voice 2 (ERG and other DPs)		Voice 3	(many other voices)

Notably, similar to the case of Austronesian and Dinka, this type of verbal inflection in Abaza is also obligatorily employed for more than one type of \bar{A} -operation. Consider *wh*-questions below in Abaza (57), where the *wh*-phrase controls voice morphology in the same way a REL-phrase does in relative clauses (53)–(55).

(57) Abaza

- a. **j**-’a-ka-ša-ja?
REL.SUBJ-DIR-LOC-fall(AOR)-Q.N
 ‘What fell?’ (Arkadiev & Caponigro 2020:13) (Subject *wh*-question (ABS S))
- b. **j**-’á-b-g-ja?
SUBJ.WH-DIR-2SG.F.ERG-bring(AOR)-Q.N
 ‘What did you bring?’ (Arkadiev o 2020:224) (Subject *wh*-question (ABS O))
- c. w-ŷa-**z**-rə-há-ja?
3SG.M.ABS-DIR-NSUBJ.WH-CAUS-FEAR(AOR)-Q.N
 ‘What frightened you?’ (Arkadiev o 2020:224) (Non-subj *wh*-question (ERG A))
- d. jə-**z**-zə-b-χ^wŷa-da?
3SG.N.ANS-NSUBJ.WH-BEN.APPL-2SG.F.ERG-buy(AOR-Q.H)
 ‘Whom did you buy it for?’ (Arkadiev & Caponigro 2020:10) (Non-subj *wh*-question (applied O))
- e. wə-**z**-pš-wá-ja?
2SG.M.ABS-REL.NSUBJ-look-IPF-Q.N
 ‘Whom are you looking at?’ (Arkadiev 2020:225) (Non-subj *wh*-question (indirect O))

To conclude, at least three typologically diverse groups of languages employ a type of verbal inflections which indexes the grammatical role of an \bar{A} -element, such as the topic or REL-phrase. Across these languages, this morphology behaves like agreement affixes and not the morphological reflex of a certain functional head, and does not show a one-to-one correspondence with the case status of the agreement trigger, hence cannot be simply analyzed as case agreement. It is proposed that this morphology is best viewed as the spell-out of different parallel chain relations that target an \bar{A} -element that is simultaneously under Agree relation with an A-probe.

5 Four loci of variation within and across Austronesian, western Nilotic, and Abaza

Having discussed the similarities among the target languages and their differences in the number of voice distinctions, I turn now to three loci of variation found among the voice system of Austronesian, Dinka, and Abaza, (58a–d).

- (58) a. The type of \bar{A} -operation that triggers the hybrid agreement
- b. Presence or absence of overt \bar{A} -movement of the goal
- c. Presence or absence of ϕ -feature agreement with the goal

5.1 The type of \bar{A} -operation that triggers voice inflections

The types of \bar{A} -operation that trigger ‘voice’ morphology in these languages are generally consistent across Dinka, Abaza, and Philippine-type Austronesian languages. In Dinka and Austronesian, the triggers include topicalization and relativization. *Wh*-movement in Dinka also employs obligatory voice agreement. The same applies to *wh*-clefts in Abaza and Philippine-type Austronesian, which is standardly analyzed as an instance of relativization (Potsdam 2006, 2009 et seq.; Arkadiev & Caponigro 2020).

(59)	Austronesian	topicalization, relativization (including <i>wh</i> -clefts)
	Dinka (Nilotic)	topicalization, relativization, <i>wh</i> -questions
	Abaza (Caucasian)	relativization (including <i>wh</i> -clefts)

A tentative analysis for the typology below is therefore that \bar{A} -operations in these languages are driven by a single, flat \bar{A} -probe, as proposed previously by for Dinka and for several Bantu languages (Miyagawa (2010; van Urk 2015).

5.2 Presence or absence of overt \bar{A} -movement of the goal

Much recent work has shown that overt \bar{A} -movement (Merge) is not a necessary outcome of Agree with an \bar{A} -probe. Abaza provides further evidence for this optionality. As (60) shows, *wh*-movement in the language is optional; a *wh*-phrase can either surface sentence-initially (60a) or remain in-situ (60b). Note the consistent presence of the voice morphology *z*- in both patterns, indexing the *wh*-phrase being a non-absolutive argument (Voice 2 in (56)).

- (60) Abaza
- a. Dızda kitab y-**z**-ima-m?
 who book 3SG.I-**NSUBJ.WH**-have-NEG
 ‘Who doesn’t have a book?’ (O’Herin 1993:45) (Wh-fronting)
- b. S-k^hıtap dızda y-na-**z**-ax^w?
 1SG-book who 3SI-PV-**NSUBJ.WH**-take
 ‘Who took my book?’ (O’Herin 1993:37) (Wh-in-situ)

The obligatoriness of voice morphology, alongside the optionality of *wh*-fronting, suggests that Move is not a necessary outcome of Agree and that flexibility can be language-internal.

Austronesian languages provide further empirical support for this view. Only a subset of Philippine-type languages require the topic/pivot to surface in a particular linear order. One of these languages is Malagasy, where pivot/topic is obligatorily sentence-finally regardless of its grammatical role or voice type (61). I assume this word order derives from \bar{A} -movement (topicalization) followed by predicate fronting, following a well-received analysis adopted in a series of previous works (e.g. Rackowski & Travis 2000; Pearson 2001, 2018; Rackowski & Travis 2000; Aldridge 2004).

- (61) Malagasy
- a. Mamono ny akoho amin’ny antsy **ny mpamboly**.
 AV.kill DET chicken with-DET knife **DET farmer**
 ‘The farmer, (s/he) is killing the chickens with the knife.’ (AV)
- b. Vonoin’ ny mpamboly amin’ny antsy **ny akoho**.
 PV.kill DET farmer with-DET knife **DET chicken**
 ‘The chickens, the farmer is killing with the knife.’ (PV)

- c. Amonoaŋ ny' mpamboly ny akoho **ny antsy**.
 CV.kill DET farmer DET chicken DET **knife**
 'The knife, the farmer is killing the chickens (with it).' (Pearson 2005:389–390) (CV)

The second pattern can be described as pivot-in-situ, where the topic/pivot consistently appears in its θ -position. Consider the Paiwan examples in (62), where the word order of the sentence generally follows the thematic hierarchy of the event participants (agent > theme > adjuncts), regardless of voice alternation.

(62) Paiwan

- a. Q<**m**>alup **a caucau** tua vavuy i gadu tua vuluq.
 <AV>hunt CN.PIVOT **man** CN.ACC pig LOC mountain CN.OBL spear
 'The man hunts wild pigs in the mountains with a spear.' (AV)
- b. Qalup-**en** nua caucau **a vavuy** i gadu tua vuluq.
 hunt-PV CN.NOM man CN.PIVOT **pig** LOC mountain CN.OBL spear
 'The man hunts wild pigs in the mountains with a spear.' (PV)
- c. Qalup-**an** nua caucau tua vavuy **a gadu** tua vuluq.
 hunt-LV CN.NOM man CN.ACC pig CN.PIVOT **mountain** CN.OBL spear
 'The man hunts wild pigs in the mountains with a spear.' (LV)
- d. **Si**-qalup nua caucau tua vavuy i gadu **a vuluq**.
 CV-hunt CN.NOM man CN.ACC pig LOC mountain CN.PIVOT **spear**
 'The man hunts wild pigs in the mountains with a spear.' (Ferrell 1979:202) (CV)

A third type of languages allows flexible word order among nominals, illustrated with the Puyuma examples in (63).

(63) Puyuma

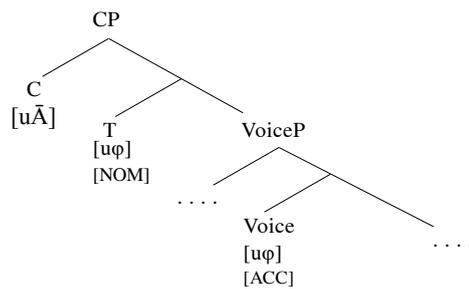
- a. P<en>angutr dra dare' **na markataguin**.
 <AV>grab INDEF.ACC soul DEF.PIVOT **couple**
 'The couple grabbed some soil.' (AV)
- b. P<en>angutr **na markataguin** dra dare'.
 <AV>grab DEF.PIVOT **couple** INDEF.ACC soul
 'The couple grabbed some soil.' (Teng 2008:148) (AV)

Crucially, all three types of languages display the same type of voice system and the 'pivot-only' constraint in relativization. This variation mirrors the flexibility in \bar{A} -movement observed in Abaza (60), lending further support to the view that overt \bar{A} -movement is not necessary following Agree.

5.3 Optionality in overt ϕ -feature agreement with the goal

The third locus of variation found among the target languages is the presence or absence of ϕ -feature agreement with the pivot – namely, the controller of voice morphology. As noted in section 1, recent work has shown that Agree with the ϕ -probe is not the only possible trigger of ϕ -feature agreement; instead, that agreement may also index the Agree relation with an \bar{A} -probe, such as [uTOP] (e.g. (3)–(5)). Under the present proposal that Austronesian-type voice is made up of four types of parallel chain relations (repeated in (64)), an immediate prediction is therefore that this verbal inflection may co-occur with ϕ -feature agreement with the topic/pivot. Furthermore, these languages may also spell out abstract subject and/or object agreement as ϕ -feature agreement (alongside that with the topic/pivot), just like many natural languages do.

(64) Proposal: the make-up of the Austronesian-type voice system



Both predictions are attested in the target languages. Dinka demonstrates a case where the topic-indexing voice morphology co-occurs with ϕ -feature agreement with the grammatical subject (e.g. à-‘third-person singular subject’), as in (65).

(65) Dinka

Cuḷin à-**céem** Áyèn nḗ pǎal.
 food 3s.eat-OV Ayen.GEN P knife

‘Food, Ayen is eating with a knife.’ (van Urk 2015:61) (Object Voice)

Similarly, in Abaza, voice morphology (‘wh-agreement’) co-occurs with ϕ -feature agreement with the absolutive DP – which may be viewed as the rough equivalent of subject agreement in accusative languages such as Dinka (66).

(66) Abaza

a-sabəy-k^wa dɔzda yə-r-pʃə
 DEF-child-PL who REL.SUBJ-3PL-look

‘Who is taking care of the children?’ (O’Herin 2002:252)

A similar design is found in Austronesian. Many Philippine-type languages employ two series of person/number-indexing morphemes on the verb, which cross-reference the grammatical subject and the topic/pivot. Consider below two PV examples from Seediq (67) and Puyuma (68). In both sentences, the person and number features of the topic/pivot as well as those of the grammatical subject are marked by a bound morpheme on the verb/auxiliary.

(67) Seediq

Wada-**ku-na** bbe-un na Pawan ka yaku.
 PRF-**1SG.TOP-3SG.SUBJ**- hit-PV NOM Pawan PIVOT 1SG

‘Pawan hit me.’ (Patient Voice (object topic))

(68) Puyuma

Tu_i-trakaw-ay-**yu** dra paysu kan senten_i.
3.SUBJ-steal-LV-**2SG.TOP** INDEF.ACC money PN.NOM Senten

‘Senten stole money from you.’ (Locative Voice (locative topic))

Such morphemes are conventionally described as clitic pronouns in the literature, according to which (67)–(68) are instances of clitic doubling.¹² However, to the best of my knowledge, there has been no dedicated research that systematically examined whether such morphemes are pronominal clitic or agreement morphology. In fact, these morphemes are better analyzed as agreement and not pronominal clitics using the diagnostics adopted in recent work (Preminger 2009; Kramer 2014; Baker & Kramer, 2016, 2018; Yuan 2021), and there is no specific evidence favoring a pronominal clitic analysis. Kramer (2014) outlines several main differences between agreement and pronominal clitic doubling (69).

- (69) a. Agreement = obligatory, realization of valued ϕ -features on a functional head
 b. Clitic doubling = optional, D that has moved to a verbal functional head, potential semantic restrictions (e.g. definiteness/specificity) on the full DP

The alleged pronominal clitics illustrated in (67)–(68) show several key traits of agreement. First, doubled clitics are commonly optional across languages (Kramer 2014; Yuan 2021), whereas the morphemes under discussion are obligatory across Philippine-type Austronesian languages that display such morphemes; omission yields ungrammaticality (see Billings & Kaufman 2004, Ross 2015, and references grammars of individual languages cited in Blust 2013). Second, as opposed to pronominal clitics, which can only index specific DPs in many languages (Yabe 2001; Haile 1970; Kramer 2014), the distribution of the alleged clitics in Philippine-type languages is not subject to any semantic restrictions. Third, the subject-indexing morphemes in some Philippine-type languages show morphological variance sensitive to tense, aspect, and/or mood. This has been used as a key trait for distinguishing agreement from pronominal clitic. As Nevins (2011) argues, since agreement expones ϕ -features on some functional heads (e.g. T), it may interact with other features on the same head; conversely, clitics – which are Ds that adjoin to their host (again, T) – are expected to be invariant. Consider, for example, subject agreement in Spanish, which is tense-variant.

- (70) Spanish
 a. Lo compró.
 3S.ACC bought.3S
 ‘She bought it.’
 b. Lo comprará.
 3S.ACC will.buy.3S
 ‘She will buy it.’ (Yuan 2021:7)

A similar type of TAM-sensitive inflection is observed with the subject-indexing marker in Puyuma (Teng 2008; Cauquelin 2015). In this Philippine-type language, the first-person singular form *ku-* is used for indicative mood (71a), whereas a distinct form *ti-* is used for the desiderative mood (71b) (Teng 2008: 113).

- (71) Puyuma
 a. **Ku**-berayay-yu kana katawa.
1S.SUBJ.IND-give-LV-2SG.TOP DEF.CM₂ papaya
 ‘I have given you a papaya (you asked for it).’ (Cauquelin 2015:200)
 b. **Ti**-beray-ay-yu kana katawa.
1S.SUBJ.DES-give-LV-2SG.TOP DEF.CM₂ papaya
 ‘You will be given by me the papaya (because I want to).’ (Cauquelin 2015:471)

¹²The subject agreement affix is traditionally glossed as GEN/ERG clitic in the literature, as it has long been overlooked that such agreements may also index undergoers in unaccusatives (e.g. (61b)), and hence is better viewed as indexing subjects and not ergative phrases. See Chen & Fukuda (2017) for a more detailed discussion.

Fourth, the so-called ‘object clitic’ found in some Philippine-type languages also shows typical behaviors of object agreement. Like object agreement morphology, it is unique per clause and obligatorily cross-references the highest internal argument (Baker 2012; Deal 2010; Kramer 2014). Consider, for example, similarities in the distribution of object agreement in Amharic and the so-called object clitic in the Philippine-type language Bunun. In Amharic, object agreement can only track the (female) goal ‘Almaz’ and not the masculine theme ‘the book’. This is different from instances of clitic doubling, where either the theme or the goal may be referenced.

(72) Amharic

Girma lä-Almaz mäs’haf-u-n sät’t’-at/*w
 Girma.M DAT-Almaz.F book-DEF.M-ACC give-3FS.O/*3MS.O

‘Girma gave the book to Almaz.’ (Kramer 2014:600)

Consider also three examples below from Bunun, where the object-indexing marker is unique in Bunun and agrees only with the recipient and not the theme in double-object ditransitives (73b). Notice also that in instances of negation (73c).

(73) Bunun

- a. M-adu?**=ik=su?**
 AV-like=**1SG.TOP=2SG.OBJ**
 ‘I like(d) you.’ (Huang 1997:319) (Object agreement with theme)
- b. Ma-saiv=**ik=su?** tasa? ahil.
 AV-give=**1SG.TOP=2SG.OBJ** one book
 ‘I give/gave you a book.’ (Huang 1997:371) (Object agreement with recipient)

Fifth, in some Philippine-type languages, the subject- and topic-indexing markers are realized as a single portmanteau affix. Consider the examples below in Kapampangan, where the two markers are spelled out as the affix *-ne*.

(74) Kapampangan

- a. Su-sulagpo-**ya** ing ayup.
 PROG-fly.AV-**3SG.TOP** SPEC.SG bird
 ‘The bird is flying.’ (Kitano 2008:90) (Actor Voice)
- b. Seli-**ne** nita-ng tau ing bale.
 buy.PV-**3SG.TOP+3SG.SUBJ** that.NOM-LK man PIVOT house.
 ‘That man bought the house.’ (Kitano 2008:90) (Patient Voice)

According to Woolford (2016), portmanteau forms are always true agreement morphemes; portmanteau pronominal clitics/incorporated pronouns do not exist. The fact that the subject- and pivot-indexing markers are realized as a single morpheme in languages like Kapampangan thus reinforces the agreement approach to the so-called pronominal clitics.¹³

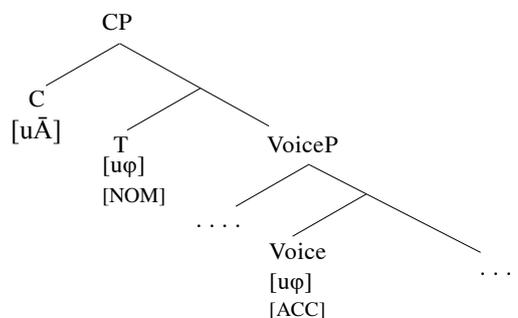
Finally, note that the pronominal clitic analysis entails a typologically rare assumption, that Philippine-type languages employ a dedicated series of pronominal clitic for *topics*. While such a design is crosslinguistically unusual, analyzing such morphemes as ϕ -feature agreement is not only empirically optimal but avoids this unusual assumption. Furthermore, a key trait of these person/number-indexing morphemes across Philippine-type Austronesian languages is that the third-person pivot

¹³This type of portmanteau agreement may be analyzed as Morphological/PF Portmanteau Agreement as proposed in Woolford (2016), which spells out features of an adjacent head/morpheme at PF.

form is consistently null. This consistent gap in the paradigm is easier to account for under an agreement analysis – given gaps in agreement paradigms across languages. It is, however, difficult to explain under a pronominal clitic analysis, as gaps in clitic pronoun systems – in particular third-person singular pronouns – is crosslinguistically rare. See also existing agreement analyses proposed for several Philippine-type languages in Chang (1997) and Ochiai (2009). The discussion above does not intend to draw a conclusion based on specific language data. However, it is noteworthy that much recent work has acknowledged the difficulty in drawing a clear boundary between clitic pronouns and agreement (Haspelmath 2013, 2015; Kramer 2014; Yuan 2021).

To conclude, the possible co-occurrence of ϕ -feature agreement with the topic, subject, and direct object in these languages reinforces the current proposal that the Austronesian-type voice system is made up of three types of abstract Agree relations: Agree with $[\text{u}\bar{\text{A}}]$ and Agree with the ϕ -probe on T (subject agreement) and on the matrix Voice (object agreement) (75). The attested variation in the presence or absence of these three sets of ϕ -feature agreement in Philippine-type languages further reinforces our current understanding that morphological agreement is a possible but not necessary realization after Agree.

(75) Proposal: the make-up of the Austronesian-type voice system



5.4 Implications and remaining questions

I have proposed that what is known as ‘Austronesian-style voice’ or ‘wh-agreement’ is best analyzed as the morphological reflex of different parallel chains targeting one and the same goal – where an A- and an $\bar{\text{A}}$ -probe probe the same phrase. The fact that such verbal inflections may co-occur with ϕ -feature agreement with the goal suggests that these affixes are distinct from ϕ -feature agreement, rather than manifesting a special type of ϕ -feature agreement (e.g. case agreement).

Furthermore, the fact that such voice morphology is observed in both accusative and ergative languages confirms that the type of verbal morphology under consideration is independent of case alignment. The following question therefore remains: how many parallel chains of Agree relations can be realized as distinct verbal affixes, given the patterns summarized in (76)?

(76)

	Subjects	Direct objects	Lower DPs	Locatives	Other adjuncts
Austronesian	Voice 1	Voice 2	Voice 4	Voice 3	Voice 4
Dinka/Kurmuk	Voice 1	Voice 2	?		Voice 3
Abaza	Voice 1	Voice 2 (ERG and other DPs)		Voice 3	(many other voices)

A tentative explanation is that the number of voice distinctions is language-specific and may be subject to diachronic development. Many western Austronesian languages, for example, have undergone extensive loss in voice distinctions, where the prototypical four-way division in voice morphology has reduced to a three-way contrast between subjects, direct objects, and locative phrases (where non-locative adjuncts cannot be marked as pivot) or a simple two-way division between subjects and non-subject undergoers (see, e.g., Chen & McDonnell 2019 for a typological survey of western Austronesian voice systems).

Notably, the fact that Abaza employs the same voice morphology for the ergative and types of indirect object strengthens the view that \bar{A} -agreement of this type is neither a type of case agreement nor verbal inflection for specific thematic roles. At the same time, we have an example of a universal design that highlights the fact that all these languages possess some kind of last-resort voice that targets pivots of distinct grammatical/thematic role. This suggests that the exact parallel chain relations chosen to be realized in morphology may differ across languages.

If the current account of Austronesian-type voice is on the right track, it reveals a design that highlights abstract ϕ -agreement in typologically diverse languages. To the best of my knowledge, there has been no report of subject-prominent languages that employ specific voice morphology for indicating the \bar{A} -agree relation of subject (and or object). This reveals an understudied asymmetry between subject-prominent and topic-prominent languages – only the latter exhibits a possible design that enables a specification of the A-agree relation of a syntactically prominent \bar{A} -element (e.g. topic).

6 Conclusion

In this paper, I have discussed an understudied type of agreement morphology known in the literature as ‘Austronesian-style voice’ or ‘*wh*-agreement’. I argued that such verbal affixes are the morphological reflex of different parallel chain relations (triggered by Agree with both an \bar{A} - and A-probe) targeting one and the same goal, and that this design is a feature of discourse configurationality (Li & Thompson 1976; Miyagawa 2010) as a means of indicating the A-relation of the goal of an \bar{A} -probe. This analysis suggests that ϕ -feature agreement is not the sole available means of realizing abstract \bar{A} -Agree relations. Future investigation of this type of hybrid agreement would shed more light on the relationship between Agree and agreement.

References

- Abbott, Miriam. 1991. Macushi. In D. Derbyshire & G. Pullum (eds.), *Handbook of Amazonian Languages* Vol. 2, 23–160. Berlin/New York: Mouton de Gruyter.
- Aboh, Enoch and Marina Dyakonova. 2009. Predicate doubling and parallel chains. *Lingua* 119(7):1035–1065.
- Aldridge, Edith. 2004. Ergativity and Word Order in Austronesian Languages. Ph.D. dissertation, Cornell University.
- Aldridge, Edith. 2012. Antipassive and ergativity in Tagalog. *Lingua* 122(3):192–203.
- Aldridge, Edith. 2017. Phi-Feature Competition: A unified approach to the Austronesian extraction restriction. In J. Kantarovich, T. Truong & O. Xherija (eds.), *Proceedings of the 52nd Meeting of the Chicago Linguistic Society (CLS 52)*: 1–20.
- Andersen, Torben. 1991. Subject and topic in Dinka. *Studies in Language* 15(2):265–294.
- Andersen, Torben. 2007. Auxiliary verbs in Dinka. *Studies in Language* 31(1):89–116.
- Anderson, Torben. 2015. Syntacticized topics in Kurmuk: A ternary voice-like system in Nilotic. *Studies in Language* 39 (3):508–554.
- Aravind, Athulya. 2018. Licensing long-distance wh-in-situ in Malayalam some padding here. *Natural Language and Linguistic Theory* 36:1–43.
- Arkadiev, Peter and Ivano Caponigro. 2020. Conveying content questions without wh-words: Evidence from Abaza. *Proceedings of Sinn und Bedeutung* 25.
- Arkadiev, Peter. 2020. Syntax in morphological guise: Interrogative verbal morphology in Abaza. *Linguistic Typology* 24(2): 211–251.
- Bahloul, Maher and Wayne Harbert. 1993. Agreement asymmetries in Arabic. In J. Mead (ed.), *Proceedings of WCCFL 11*, 15–31. Stanford, California: CSLI Publications.
- Baier, Nicholas. 2018. Anti-Agreement. Ph.D. dissertation, UC Berkeley.
- Baker, Mark. 1988. *Incorporation: A theory of grammatical function changing*. Chicago: University of Chicago Press.
- Baker, Mark. 2003. Agreement, dislocation, and partial configurationality. In A. Carnie, H. Harley, and M. Willie (eds.), *Formal approaches to function in grammar*, 107–132. Amsterdam: John Benjamins.
- Baker, Mark C. 2008. *The syntax of agreement and concord*. Cambridge: Cambridge University Press.
- Baker, Mark. 2012. On the relationship of object agreement and accusative case: evidence from Amharic. *Linguistic Inquiry* 43:255–274.
- Baker, Mark and Ruth Kramer. 2016. Clitics are pronouns: Reduce and interpret. Ms., Rutgers University and Georgetown University.
- Baker, Mark and Ruth Kramer. 2018. Doubled clitics are pronouns: Amharic objects and beyond. *Natural Language and Linguistic Theory* 36:1035–1088.
- Bilings, Loren and Daniel Kaufman. 2004. Towards a typology of Austronesian pronominal clisis. *ZAS Papers in linguistics* 34: 15–29.
- Cauquelin, Josiane. 2015. *Nanwang Puyuma-English Dictionary*. Academia Sinica Taipei: Institute of Linguistics.
- Chang, Anna Hsiou-chuan. 2006. A reference grammar of Paiwan. PhD dissertation, Australian National University.
- Chang, Henry Yung-Li. 1997. Voice, case, and agreement in Seediq and Kavalan. PhD dissertation, National Tsing Hua University.
- Chang, Henry Yung-li. 2017. The AV-only restriction and locality in Formosan languages. *Tsing Hua Journal of Chinese Studies* 47(2):231–254.

- Chang, Henry Yung-li. 2023. SVCs and other complex constructions in Formosan languages. In Li, Paul et al. (eds.), *Handbook of Formosan Languages*, 350–384. Boston, MA: Brill.
- Chen, Victoria. 2017. A reexamination of the Philippine-type voice system and its implications for Austronesian primary-level subgrouping. PhD dissertation, University of Hawai‘i at Mānoa.
- Chen, Victoria. 2021. Tagalog voice revisited: Insights from binding. In R. Soo et al. (eds), *Proceedings of WCCFL 38*. Cascadilla Proceedings Project.
- Chen, Victoria. 2022. When Philippine-type voice meets Indo-European-type voice: Insights from Puyuma. *Journal of East Asian Linguistics* 31: 517–550.
- Chen, Victoria and Bradley McDonnell. 2019. Western Austronesian Voice. *Annual Review of Linguistics* 5:173–195.
- Chen, Victoria and Shin Fukuda. 2017. Re-labeling “Ergative”: Evidence from Formosan. *Proceedings of the 23rd Austronesian Formal Linguistic Association (AFLA 23)*, 50–65. Canberra: Asia-Pacific Linguistics.
- Chomsky, Noam. 1995. *The minimalist program*. Cambridge: MIT Press.
- Chomsky, Noam. 2000. Minimalist inquiries: The framework. In R. Martin et al. (eds.) *Step by step: Essays on Minimalist syntax in honor of Howard Lasnik*, 89–155. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2001. Derivation by phase. In M. Kenstowicz (ed.) *Ken Hale: A life in language*, 1–52. Cambridge, MA: MIT Press.
- Chung, Sandra. 1994. Wh-agreement and “referentiality” in Chamorro. *Linguistic Inquiry* 25(1):1–44.
- Collins, Chris and Komlan Essizewa. 2007. The syntax of verb focus in Kabiye. In D. Payne and J. Peña (eds.), *Selected proceedings of the 37th annual conference on African Linguistics*, 191–203. Somerville, MA: Cascadilla Press.
- D’Alessandro, Roberta. 2020. Agreement across the board: Topic agreement in Ripano. In P. Smith, J. Mursell & K. Hartmann (eds.), *Agree to Agree: Agreement in the Minimalist Programme*, 235–270. Berlin: Language Science Press.
- Deal, Amy Rose. 2010. Ergative case and the transitive subject: A view from Nez Perce. *Natural Language & Linguistic Theory* 28: 73–120.
- Duncan, Tamara Sorenson and Daniel Abera. 2009. Amharic Causatives Revisited. Poster presented at Department of Linguistics 40th Reunion, University of Alberta.
- É. Kiss, Katalin. 1995. Introduction. In K. É. Kiss, (ed.), *Discourse configurational languages*, 3–27. Oxford: Oxford University Press.
- Erlewine, Michael. To appear. Subject marking on non-subjects in Squiliq Atayal. In *Proceedings of the 20th Austronesian Formal Linguistics Association (AFLA 20)*. Submitted 2014.
- Erlewine, Michael, Theodore Levin, and Coppe van Urk. 2017. Ergativity and Austronesian-type voice systems. In J. Coon, D. Massam, and L. Travis (eds.), *Oxford Handbook of Ergativity*. Oxford University Press.
- Ferrell, Raleigh. 1979. Construction Markers and Subgrouping of Formosan Languages. In N. Liem (ed.), *Southeast Asian Linguistic Studies* Vol. 3, 199–212. Pacific Linguistics, the Australian National University.
- Foley, William and Robert Van Valin. 1984. *Functional syntax and universal grammar*. Cambridge: Cambridge University Press.
- Gerds, Donna. 1988. Antipassives and causatives in Ilokano: evidence for an ergative analysis. In R. McGinn (ed.), *Studies in Austronesian Linguistics*, 295—321. Athens: Ohio University Center for International Studies.
- Guirardello, Raquel. 1999. Trumai. In R. Dixon and A. Aikhenvold (eds), *The Amazonian languages*, 351–353. Cambridge: Cambridge University Press.
- Haile, Getachew. 1970. The suffix pronouns in Amharic. *Papers in African Linguistics* 3: 101–111.

- Han, Chung-hye. 2001. Force, negation and imperatives. *The Linguistic Review* 18(4):289–325.
- Harley, Heidi. 2013. External arguments and the mirror principle: on the distinctness of Voice and v. *Lingua* 125:34–57.
- Haspelmath, Martin. 2013. Argument indexing: A conceptual framework for the syntactic status of bound person forms. In D. Bakker and M. Haspelmath (eds.), *Languages across boundaries: Studies in memory of Anna Siewierska*, 197–226.
- Haspelmath, Martin. 2015. Defining vs. diagnosing linguistic categories: A case study of clitic phenomena. In J. Blaszczak et al. (eds.), *How categorical are categories*, 273–303.
- Huang, Lilian Mei-jun. 1997. The Bunun language in Kaohsiung County. In P. Li (ed.), *The Austronesian languages of Kaohsiung County*. Kaohsiung: Government of Kaohsiung County, 351–409.
- Kandybowicz, Jason. 2008. *The grammar of repetition*. John Benjamins.
- Katagiri, Masumi. 2006. Topichood of the Philippine topic: Revisited from a cross-linguistic perspective. Paper presented at the 10th ICAL. January 17–20.
- Keenan, Edward. 1976. Remarkable subjects in Malagasy. In C. Li (ed.), *Subject and topic*, 247–301. New York: Academic Press.
- Keenan, Ed and Bernard Comrie. 1977. Noun phrase accessibility and universal grammar. *Linguistic inquiry* 8(1), 63–99.
- Kitano, Hiroaki. 2008. Transitivity and pronominal clitic order in Kapampangan. *Studies in Philippine Languages and Cultures* 17: 88–97.
- Kramer, Ruth. 2014. Clitic doubling or object agreement: The view from Amharic. *Natural Language and Linguistic Theory* 32:593–634.
- Kroeger, Paul. 1991. Phrase structure and grammatical relations in Tagalog. PhD dissertation, Stanford University.
- Kuno, Susumu. 1973. *The Structure of the Japanese Language*. Cambridge, MA: MIT Press.
- Kuo, Jonathan. 2015. Argument alternation and argument structure in symmetrical voice languages: a case study of transfer verbs in Amis, Puyuma, and Seediq. Ph.D. dissertation, University of Hawai‘i at Mānoa.
- Lasnik, Howard and Tim Stowell. 1991. Weakest crossover. *Linguistic Inquiry* 22(4):687–720.
- Li, Charles and Sandra Thompson. 1976. Subject and topic: a new typology of language. In C. Li (ed.), *Subject and Topic*, 457–461. Austin: University of Texas Press.
- McKaughan, Howard. 1958. *The inflection and syntax of Maranao verbs*. Manila: Bureau of Printing.
- Mithun, Marianne. 1994. The implications of ergativity for a Philippine voice system. In B. Fox & P.Hopper (eds.), *Voice: Form and Function*, 247–277. Amsterdam: John Benjamins.
- Miyagawa, Shigeru. 2010. *Why Agree? Why Move?* Cambridge, MA: MIT Press.
- Miyagawa, Shigeru. 2017. *Agreement Beyond Phi*. Cambridge, MA: MIT Press.
- Nevins, Andrew. 2011. Multiple agree with clitics: Person complementarity vs. omnivorous number. *Natural Language and Linguistic Theory* 29:939–971.
- Noonan, Michael. 2007. Complementation. In T. Shopen (ed.), *Language Typology and Syntactic Description*, 521–550. Cambridge: Cambridge University Press.
- Ochiai, Izumi. 2009. A study of seediq pronouns. MA thesis. Taipei: National Taiwan University.
- O’Herin, Brian. 1993. Wh-agreement in Abaza. In E. Potsdam (eds.), *Syntax and Semantics at Santa Cruz* (2), 25–56.
- O’Herin, Brian. 2002. *Case and agreement in Abaza*. SIL International and University of Texas at Arlington.
- Ostrove, Jason. 2018. When phi-Agreement Targets Topics: The view from San Martín Peras Mixtec. PhD dissertation, UCSC.
- Paul, Ileana and Diane Massam. 2021. Licensing null arguments in ingredient across languages.

- Journal of Linguistics*: 1–25.
- Paul, Ileana and Lisa Travis. 2006. Ergativity in Austronesian languages: What it can do, what it can't do, but not why. In A. Johns et al. (eds.), *Ergativity: emerging issues*, 315–36. Springer.
- Payne, Thomas. 1982. Role and reference related subject properties and ergativity in Yup'ik Eskimo and Tagalog. *Studies in Language* 6:75–106.
- Pearson, Matthew. 2001. The clause structure of Malagasy: A minimalist approach. PhD dissertation, UCLA.
- Pearson, Matthew. 2005. The Malagasy subject/topic as an A'-element. *Natural Language and Linguistic Theory* 23:381–457.
- Pearson, Matthew. 2018. Predicate raising and perception verb complements in Malagasy. *Natural Language and Linguistic Theory* 36(3): 781–849.
- Potsdam, Eric. 2006. More concealed pseudoclefts in Malagasy and the clausal typing hypothesis. *Lingua* 116(12): 2154–2182.
- Potsdam, Eric. 2009. Austronesian verb-initial languages and wh-question strategies. *Natural Language & Linguistic Theory* 27:737–771.
- Rackowski, Andrea. 2002. The Structure of Tagalog: Specificity, Voice, and the Distribution of Arguments. PhD dissertation, MIT.
- Rackowski, Andrea and Norvin Richards. 2005. Phase edge and extraction: A Tagalog case study. *Linguistic Inquiry* 36(4):565–599
- Rackowski, Andrea and Lisa Travis. 2000. V-initial Languages : X or XP Movement and Adverbial Placement. In A. Carnie & E. Guilfoyle (eds.), *The Syntax of Verb Initial Languages*, 117–141. Oxford: Oxford University Press.
- Ramos, Teresita. 1974. *The case system of Tagalog verbs*. Canberra: The Australian National University.
- Ramos, Teresita and Maria Bautista. 1986. *Handbook of Tagalog Verbs: Inflections, Modes, and Aspects*. Honolulu: University of Hawai'i Press.
- Richards, Norvin. 2000. Another look at Tagalog subjects. In I. Paul, V. Phillips, & L. Travis (eds.), *Formal issues in Austronesian linguistics*, 105–16. Dordrecht: Kluwer Academic Publishers.
- Rivero Maria and Arhonto Terzi 1995. Imperatives, V-movement and logical mood. *Journal of Linguistics* 31(2):301–332.
- Rizzi, Luigi. 1990. *Relativized minimality*. Cambridge, MA: MIT Press.
- Ross, Malcolm. 2015. The argument indexing of early Austronesian verbs. In D. Haug (ed.), *Historical Linguistics 2013: Selected papers from the 21st International Conference on Historical Linguistics, Oslo, 5-9 August 2013*, 257–280. John Benjamins Publishing Company.
- Rossi, Alfredo. 2008. *Dizionario del dialetto ripano*. Ripatransone.
- Schachter, Paul and Fe Otones. 1972. *Tagalog reference grammar*. Berkeley: University of California Press.
- Schachter, Paul. 1976. The subject in Philippine languages: Topic, actor, actor-topic, or none of the above? In C. Li (eds.), *Subject and topic*, 491–518.
- Shibatani, Masayoshi. 1988. Voice in Philippine languages. In M. Shibatani (ed.), *Passive and voice*, 85–142. Amsterdam: John Benjamins.
- Starke, Michal. 2001. Move dissolves into Merge: A theory of locality. PhD dissertation, University of Geneva.
- Stiebels, Barbara. 1999. Noun-verb symmetries in Nahuatl nominalizations. *Natural Language & Linguistic Theory* 17: 783–836.
- Teng, Stacy Fang-ching. 2008. *A grammar of Puyuma, an Austronesian language of Taiwan*. Canberra: Australian National University.
- Travis, Lisa. 2000. The 1-syntax, s-syntax boundary: evidence from Austronesian. In I. Paul et

- al. (eds.), *Formal Issues in Austronesian Linguistics*, 167–194. Dordrecht: Kluwer Academic Publishers
- van Urk, Coppe. 2015. A uniform syntax for phrasal movement: A case study of Dinka Bor. PhD dissertation, MIT.
- Woolford, Ellen. 2016. Two types of portmanteau agreement: Syntactic and morphological. In G, Legendre et al. (eds.), *Optimality theoretic syntax, semantics, and pragmatics: From uni-to bidirectional optimization*, 111–135.
- Wu, Chun-ming. 2013. The Syntax of Linking Constructions in Mayrinax Atayal and Sinvaudjan Paiwan. PhD dissertation, National Tsing-hua University.
- Wu Yvette Yi-Chi, Tamisha Tan, and Giovanni Roversi. Syntactic vs. morphological verbal concord across Austronesian languages. *Proceedings of TripleAFLA*, 104–118.
- Wurmbrand, Susi. 2014. Restructuring across the world. In L. Veselovská & M. Janebová (eds.): *Complex Visible Out There. Proceedings of the Olomouc Linguistics Colloquium: Language Use and Linguistic Structure*, 275–94. Olomouc: Palacký University.
- Yabe, Tomoyuki. 2001. Clitic doubling and the link with possessed noun phrase constructions: The case of Amharic object marking. Paper presented at the CUNY/SUNY/NYU mini-conference.
- Yuan, Michelle. 2021. Diagnosing object agreement vs. clitic doubling: An Inuit case study. *Linguistic Inquiry* 52(1): 153–179.